

# AUUGN

The Journal of AUUG Inc.

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February 1999

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General Correspondence**

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# Editorial

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Günther Feuerelsen  
Gunther.Feuerelsen@auug.org.au

It's our 20<sup>th</sup> year – you didn't think we'd let this go by without doing something different, do you?

So what do you think of our new look? We spent some time over the holidays trying to bring some new changes to AUUGN, whilst preserving the best elements that has made AUUGN last as long as it has.

I'd like to welcome our new sponsors Softway, who have joined this year as a major sponsor alongside Tellurian. Thank you for your support of AUUG and AUUGN.

We've had some casualties over the break – Matthew Dawson our Unix Traps and Tricks sub-editor is moving on to the greener pastures of the UK, and has had to give up his editorial role. Good Luck Matt, and thank you from all of us!

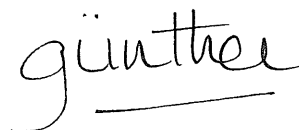
This does open the door of opportunity for some intrepid would-be writer out there, who is keen to dabble in an editorial role. So, if you've always wanted to do some writing, or editing, and are interested, I am looking for a new sub-editor for UT&T, as well as some sub-editors who would be interested in some of the new columns and directions we hope to be taking AUUGN this year.

If you're interested, drop me a line.

Finally, Congratulations to Liz Egan, who tied the knot with Steve Carroll on February 28.

Well, the work has been done, I hope you enjoy the new look AUUGN.

Happy 1999!



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**AUUGN Submission Guidelines**

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Submission guidelines for AUUGN contributions can be obtained from the AUUG World Wide Web site at:  
[www.auug.org.au](http://www.auug.org.au)

Alternately, send email to the above correspondence address, requesting a copy.

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**AUUGN Back Issues**

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A variety of back issues of AUUGN are still available. For price and availability please contact the AUUG Secretariat, or write to:  
AUUG Inc.  
Back Issues Department  
PO Box 366  
Kensington NSW 2033

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**Conference Proceedings**

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A limited number of copies of the Conference Proceedings from previous AUUG Conferences are still available. Contact the AUUG Secretariat for details.

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**Mailing Lists**

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Enquiries regarding the purchase of the AUUGN mailing list should be directed to the AUUG Secretariat.

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

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## Contribution Deadlines for AUUGN in 1999/2000

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Volume 20 • Number 2 – May 1999:	<b>April 17<sup>th</sup>, 1999</b>
Volume 20 • Number 3 – August 1999:	<b>July 17<sup>th</sup>, 1999</b>
Volume 20 • Number 4 – November 1999:	<b>October 17<sup>th</sup>, 1999</b>
Volume 21 • Number 1 – February 2000:	<b>January 17<sup>th</sup>, 2000</b>

# President's Column

Lucy Chubb  
Lucy.Chubb@auug.org.au

The start of a New Year might be a good time to remind members of some of the major activities within AUUG.

For those in capital cities (except Adelaide), you should keep an eye out for activities organised by your local chapters. Chapters organise regular activities such as talks and social events, and many of them hold an annual chapter conference in the early part of the year. (If you are interested in forming a chapter in a location that hasn't got one yet, we'd love to hear from you).

A new event, the Australian Open Source Symposium planned for late March in Melbourne. Symposia on different topics are being considered for other cities later in the year.

Then, of course, there is the major event of the year - the winter conference, which is being held in Melbourne this year. Over the last couple of years we have been moving away from having an exhibition with the conference. This year we plan to have no exhibition, but to concentrate on the conference itself. The conference dinner is on 9/9/99 (any COBOL programmers out there?). It's another date that has led to speculation about the consequences of generations of shortsighted programming practices.

Anyway, it's time to start thinking about getting involved. Have a look at the call for papers in this issue of AUUGN. Just remember that if you find it interesting, other AUUG members may well find it interesting and it's probably worth speaking about. If you would rather be personally asked to submit an abstract, just send me your name and I'll ask you :-)

If you know any research students doing research in the area of UNIX or open systems, tell them to have a look at the AUUG web page and find out the details of the Lions' Student Award. With a prize of \$1000 and a year's membership of AUUG, it's worth thinking about. Last year's award winner got good press coverage, with an article that appeared in the Age and the Sydney Morning Herald IT sections.

I hope you have all been finding Systems Magazine useful. (Just to remind you, AUUG entered an agreement with the publisher of Systems Magazine to provide a subscription to AUUG members at no additional cost). Keep an eye out for the AUUG article, which will appear every second issue. For those who get the Sydney Morning Herald, look for the AUUG column. If you fancy that you have something to say in either place that is of interest to AUUG members, get in touch to find out the requirements and then write it!

It's been a while since we last asked you what you

are interested in and what you work with. We're going to fix that soon with a new survey. To make it easier for you, we're going to give you the option of either filling in an online version or a paper one. Please help us work out how to give the best AUUG we can by sending back that information.

If you want more information about any of the above, our business manager Liz Egan would be more than happy to hear from you.

★ ★ ★

Late last year an old friend and colleague, John Lions, died. John was a founder of AUUG, its first life member and a regular attendee at the AUUG winter conference. I first met John some 18 years ago as a student in his Operating Systems course. Later I came to know him as a postgraduate student, as a tutor in his operating systems subject, at conferences, and as I worked in the operating systems field.

John was deeply committed to his work. He was widely known and respected by his colleagues in Australia and overseas. The course of my career was profoundly changed by his influence, and I am grateful for knowledge he imparted to me, his encouragement and for the confidence that he showed in my abilities. I am sure that there are a great many others who are glad to acknowledge a debt of gratitude for John's work. John's illness and death have taken from us a friend, respected colleague and mentor, and sadly cut short his great contributions to the field of Computer Science.

A tribute to John, and his work, appears later in the issue.

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For the latest  
news on  
AUUG

Check out the AUUG  
website at:

[www.auug.org.au](http://www.auug.org.au)

# AUUG Queensland Chapter 1999 Chapter Technical Conference

Thursday, April 22<sup>nd</sup> 1999

Preliminary Announcement and Call for Papers

The AUUG chapter conference series provides a forum for discussion of technical issues and developments relating to UNIX and all aspects of open systems. The AUUG Queensland Chapter Technical Conference will be a one-day conference, to be held from 8:30am on Thursday, 22nd April 1998, at the Brisbane Park Royal Hotel. The intended format is a number of presentations to an audience of people interested in the technical aspects of UNIX, Linux, open source and/or open systems applications and system administration.



## Call for Papers:

Authors are invited to submit abstracts presenting new or interesting results of current research, development, porting or implementation experience. This includes submissions on any topic relating to technical issues of UNIX, Linux, open source, development, networking, security, and open systems in the widest sense.

## Speaker Incentives:

Presenters are afforded free conference registration. Limited funding is available to interstate and remote Queensland speakers to assist with travel expenses.

## Form of Submissions:

Please submit an abstract together with an outline. The outline should contain enough detail to allow the program committee to make a reasoned decision about the final presentation. A submission should be from 2-5 pages and include:

1. Author names(s), postal addresses, telephone numbers, fax and e-mail addresses.
2. A biographical sketch not to exceed 100 words.
3. Abstract: 100 words.
4. Outline: 1-4 pages giving some details of the approach used, algorithms implemented, sections of kernel hacked, or any other relevant information.
5. References to any relevant literature.
6. Audio-visual requirements: Please indicate your requirements for overhead projector or video/computer equipment.

## Acceptance:

Authors whose submissions are accepted are asked to provide a presentation in some machine readable format, which can be converted, to HTML. A formal paper is not required, but would still be welcome. Copies of presentations will be made available on the WWW after the conference.

## Relevant Dates:

Abstract and outlines due: 12 March 1999  
Notification to authors: 19 March 1999  
Presentation material available: 6 April 1999

## Addresses:

Please submit hard copy or electronic copy (preferred) of abstracts and outlines to:

David McCullough  
Stallion Technologies  
33 Woodstock Road  
Toowong Qld 4066  
AUSTRALIA

Email: davidm@stallion.oz.au  
Fax: +61 7 3270-4245

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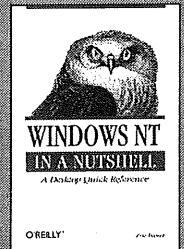
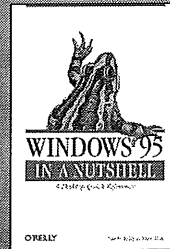
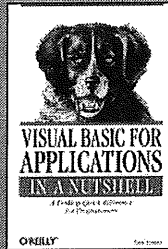
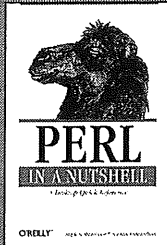
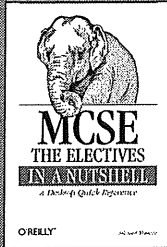
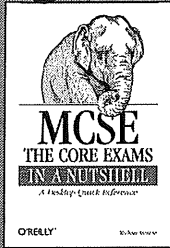
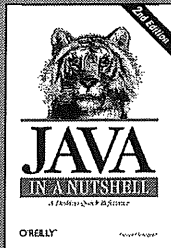
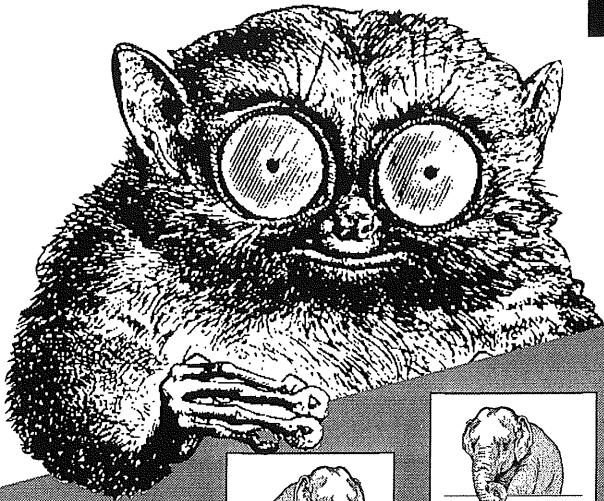
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Stuart Remphey - Sun Microsystems  
Rick Stevenson - Dascom Australia  
Mark White - Compaq Computer Asia/Pacific

For enquiries on conference registration, accommodation arrangements, promotion, venue and other matters not relating to the submission of papers, contact the QAUUG committee on qauug-exec@auug.org.au.

# In a Nutshell

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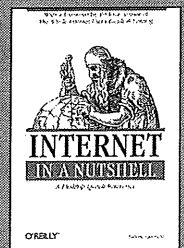
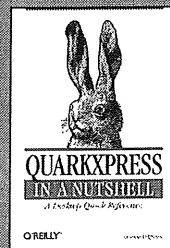
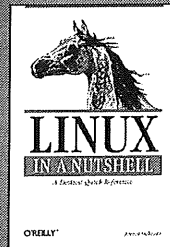
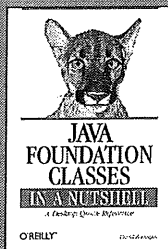
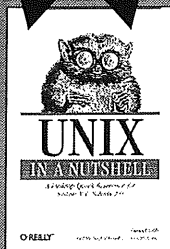
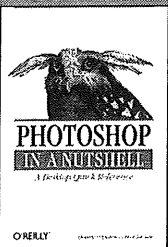
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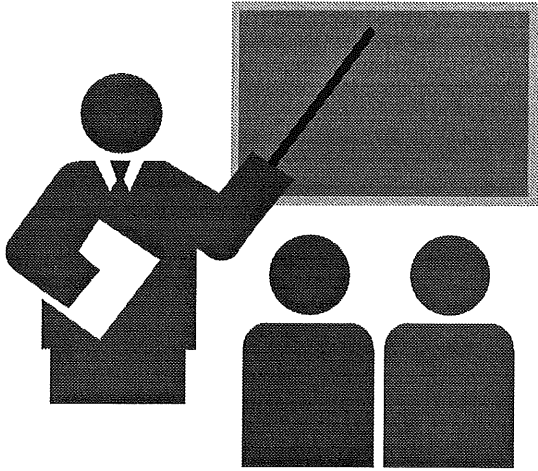
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# Call for Papers

## AUUG'99

AUUG'99 Conference  
September 8-10, 1999  
Carlton Crest Hotel  
Queens Road  
Melbourne VIC Australia



### THEME: "OPEN SOURCE"

The 1999 AUUG winter conference will be held at the Carlton Crest Hotel, Queens Road, Melbourne, Australia, between September 8th and 10th.

The conference will be preceded by two days of tutorials, on September 6th and 7th.

The program committee invites proposals for papers and tutorials relating to:

- Open Source
- Technical aspects of Unix and Open Systems
- Networking, Internet (including the World Wide Web)
- Business Experience and Case Studies

Presentations may be given as tutorials, technical papers, or management studies. Technical papers are designed for those who need in-depth knowledge, whereas management studies present case studies of real-life experiences in the conference's fields of interest.

A written paper, for inclusion in the conference proceedings must accompany all presentations.

Speakers may select one of two presentation formats:

#### Technical presentation:

A 25-minute talk, with 5 minutes for questions.

#### Management presentation:

A 20-25 minute talk, with 5-10 minutes for questions (i.e. a total 30 minutes).

Panel sessions will also be timetabled in the conference and speakers should indicate their willingness to participate, and may like to suggest panel topics.

Tutorials, which may be of either a technical or management orientation, provide a more thorough presentation, of either a half-day or full-day duration.

Representing the largest Unix and Open Systems event held in Australia this conference offers an unparalleled opportunity to present your ideas and experiences to an audience with a major influence on the direction of computing in Australia.

### SUBMISSION GUIDELINES

Those proposing to submit papers should submit an extended abstract (1-3 pages) and a brief biography, and clearly indicate their preferred presentation format.

Those submitting tutorial proposals should submit an outline of the tutorial and a brief biography, and clearly indicate whether the tutorial is of half-day or full-day duration.

### SPEAKER INCENTIVES

Presenters of papers are afforded complimentary conference registration.

Tutorial presenters may select 25% of the profit of their session OR complimentary conference registration. Past experience suggests that a successful tutorial session of either duration can generate a reasonable return to the presenter.

### IMPORTANT DATES

#### Abstracts/Proposal Due:

May 7, 1999

#### Authors notified:

May 24, 1999

#### Final copy due:

July 23, 1999

#### Tutorials:

September 6-7, 1999

#### Conference:

September 8-10, 1999

Proposals should be sent to:

AUUG Inc.  
PO Box 366  
Kensington NSW 2033  
AUSTRALIA

Email: [auug99@auug.org.au](mailto:auug99@auug.org.au)



# Update: The First Australian Open Systems Symposium

Michael Paddon  
Michael.Paddon@auug.org.au

Some of you may have heard the rumours that AUUG is putting together an Open Source Symposium. I am happy to confirm that this indeed is happening.

Be careful not to confuse AOSS-1 with the AUUG summer conference. They are different events, with different formats and goals.

The purpose of the symposium is simple. We want to get as many Australian open source developers and users together as is possible. Some of the best open source software is already coming out of our country, and we think there is untapped talent and enthusiasm that is only waiting for an opportunity. We hope to see new

Projects founded and existing projects recruiting at the symposium, as well as (of course) the formal presentations.

We had originally hoped to be holding the Symposium in February/March, but a combination of circumstances has forced us to reset our timetable to point to after Easter. First and foremost, we want this to be an event that is open to the entire Australian Open Source community. Talking to all the other user groups involved has taken some time, but the enthusiastic support we are receiving has made it worthwhile.

Secondly, while most of the content will be Australian, we have been working hard to finalise arrangements for an international keynote speaker. This is finally sorting itself out.

AOSS-1 is gathering momentum. If you'd like to be involved in some way, please drop me an email. Don't put it off, do it now! We'll be putting more information up on the AUUG we page on a regular basis

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# UniForum NZ '99

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Registration brochures will be available mid-February 1999.

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Ray Brownrigg  
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Email: ray.brownrigg@uniforum.org.nz

Or write to

UniForum NZ  
P.O. Box 585  
Hamilton  
New Zealand.



# What's on at USENIX

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Full tutorial and technical session programs, and online registration, are available at <http://www.usenix.org/events/> for the following:

## 1ST CONFERENCE ON NETWORK ADMINISTRATION

April 7-10, 1999, Santa Clara, California  
Co-sponsored by SAGE, the System Administrators Guild

Co-located with:

## 1ST WORKSHOP ON INTRUSION DETECTION AND NETWORK MONITORING

April 9-12, 1999, Santa Clara, California

## COOTS: 5TH CONFERENCE ON OBJECT-ORIENTED TECHNOLOGIES AND SYSTEMS

May 3-7, 1999, San Diego, California

## WORKSHOP ON SMARTCARD TECHNOLOGY

May 10-11, 1999, Chicago, Illinois  
Co-sponsored and co-located with CardTech/SecureTech

## USENIX ANNUAL TECHNICAL CONFERENCE

June 6-11, 1999, Monterey, California  
This year the tutorial program has been expanded to three days.

John Ousterhout of Scriptics Corporation will provide the keynote. And included again is the FREENIX track devoted to providing top-quality presentations on the latest developments and interesting applications in open source software.

### Recently added to the schedule:

## WORKSHOP ON EMBEDDED SYSTEMS

March 29-31, 1999, Cambridge, Massachusetts  
Co-sponsored by the MIT Media Laboratory  
Call for Papers is online.  
Abstracts due: January 31, 1999.  
Attendance is limited to 60 selected individuals.

The Call for Papers is also online for:

## 3RD WINDOWS NT SYMPOSIUM

July 12-14, 1999, Seattle, Washington  
Paper submissions due: February 23, 1999

Co-located with:

## LISA-NT--2ND LARGE INSTALLATION SYSTEM ADMINISTRATION OF WINDOWS NT CONFERENCE

July 14-16, 1999, Seattle, Washington  
Co-sponsored by SAGE, the System Administrators Guild  
Submission proposals due: February 23, 1999

## 8TH SECURITY SYMPOSIUM

In cooperation with The CERT Coordination Center

August 23-26, 1999, Washington, D.C.

Paper submissions due: March 9, 1999

## 2ND CONFERENCE ON DOMAIN-SPECIFIC LANGUAGES

October 3-6, 1999, Austin, Texas

In cooperation with ACM SIGPLAN and SIGSOFT

Paper submissions due: March 22, 1999

## 2ND USENIX SYMPOSIUM ON INTERNET TECHNOLOGIES AND SYSTEMS

October 11-14, 1999, Boulder, Colorado

Co-sponsored by IEEE Computer Society Technical Committee on the Internet

Extended abstracts due: March 25, 1999

### Just added:

## LISA '99--13TH SYSTEMS ADMINISTRATION CONFERENCE

November 7-12, 1999, Seattle, Washington

Co-sponsored by SAGE, the System Administrators Guild

Extended abstracts and Invited Talk Proposals due: May 25, 1999

## TCL/2K: 7TH USENIX TCL/TK CONFERENCE

February 14-18, 2000, Austin, Texas

Extended abstracts due: September 1, 1999

\* \* \*

The USENIX Association supports user groups worldwide. We have recently inaugurated several programs to further this goal:

## CO-SPONSORSHIP OF CONFERENCES & INTERNATIONAL AFFILIATE PROGRAM

There are many different models for affiliate membership or co-sponsorship; contact the Executive Director at [ellie@usenix.org](mailto:ellie@usenix.org)

## INTERNATIONAL SPEAKERS PROGRAM

[http://www.usenix.org/membership/intnl\\_speakers.html](http://www.usenix.org/membership/intnl_speakers.html)

## USER GROUPS ON THE USENIX WEB SITE

<http://www.usenix.org/membership/ugs.html>

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# News from the AUUG Business Manager

Liz Carroll

[busmgr@auug.org.au](mailto:busmgr@auug.org.au)

Hi All,

## SYDNEY MORNING HERALD

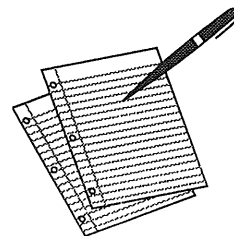
By now you are probably all aware that AUUG is running a fortnightly column in the Sydney Morning Herald. (Thank you to everyone who has contributed to date.) As such, we are always looking out for good articles. Should anyone wish to contribute please email me your article for submission. If you are unsure whether something is appropriate, an outline of the topic will be sufficient and I will let you know whether it will be okay. Following is a brief outline of the type of article the SMH is looking for:

"The Sydney Morning Herald is targeting its' IT section to business, running it after the business section and targeting readership at CEOs. The column is a UNIX column (rather than an AUUG column). SMH audience also runs 80-90% of their IT section in the Age in Melbourne. UNIX Column - 600-700 words with final credit to writer and pointer to AUUG Web site."

\* \* \*

## SYSTEMS MAGAZINE

In addition to the SMH, AUUG is also running articles in Systems Magazine (copies of which AUUG members are now receiving). As such, articles of approximately 1,700 words would also be appreciated.



Should anyone have any questions, please feel free to email me or call on 02 9858 4542. I look forward to reading your articles!

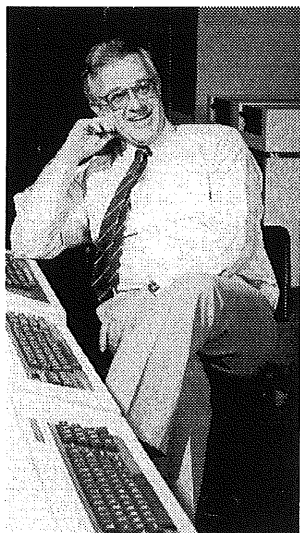
❖

# John Lions

## 1937-1998

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John Lions was born in Sydney. He graduated with first class honours in Applied Science from Sydney University in 1959. He was then awarded a scholarship to study overseas and went to Cambridge University, UK, where he was a member of St John's College while he studied for his Phd in Control Engineering.



On graduating he took a job with the consulting firm KCS Ltd. in Toronto, Canada. In 1967 he took a position at Dalhousie University in Halifax, Nova Scotia. From there he moved to a position as a Systems Analyst with Burroughs in Los Angeles. In 1972 John, with his wife and children, returned to Sydney and a position as Senior Lecturer in the Computing Department at the University of New South Wales. In 1980 he was made an Associate Professor. He remained at the University of New South Wales until his retirement due to ill health in 1995. John died on Saturday December 5<sup>th</sup> 1998 after a long illness.

In 1974, after a fellow lecturer wrote away for the new operating system, UNIX, John decided to base his Operating Systems course around reading its source code. By 1977 he had completed a commentary to accompany it. The commentary quickly became much appreciated by the growing UNIX community. It could officially only be distributed as a single copy to holders of a UNIX licence. However, such was the demand for it that it was photocopied and re-photocopied in spite of the legal restrictions on its' distribution. Sometimes the photocopies were many generations removed from the originals and were close to illegible. John's name spread along with the photocopies and became almost legendary. In 1996 John's source code and commentary books were finally able to be printed again without restrictions on their sale and distribution, and there is even a translation into Japanese. [ *Editor's Note: see AUUGN Volume 17, Numbers 5 and 6, December 1996* ]

At the time John wrote his commentary UNIX was valued by universities around the world because it was small, affordable, gave better performance than other systems they were using, and gave access to the source code. John's book became one of the critical elements in the spread of UNIX by helping it's readers to

actually understand the source code and key operating systems principles. As the pool of graduates who were familiar with UNIX went out into industry and academia, they paved the way for the breakaway from proprietary systems and the coming of the Open Source phenomenon, and for the development of the Internet and the World Wide Web, which depended on them.

John organised things. Among other things, he was instrumental in founding AUUG, the Australian Unix User's group in 1974 for computer scientists who had a common interest in the UNIX Operating System. Both UNIX and AUUG have grown and developed considerably since then. His contributions were recognised by AUUG in naming him AUUG's first life member. More recently, AUUG and the Australian Computer Society have combined forces to create the John Lions Student Award for work in the area of UNIX and Open Systems. He was further recognised for his contributions to Computer Science by being made a Fellow of the Australian Computer Society.

John spent three sabbaticals working at Bell Laboratories in New Jersey in 1978, 1983 and 1989. The links that John made through his books and during his sabbaticals, brought benefits to the Australian UNIX community as UNIX pioneers and researchers in the field were persuaded to speak at conferences in Australia.

John died, after a long illness, on 5th December 1998.

Thanks to John's wife, Marianne, for information on his early career.

Lucy Chubb

★ ★ ★

I was a student of John's in 1976; the first year that he taught his CS3 Operating Systems course based on the Unix source code. At that time IBM dominated the industry in much the same way Microsoft does now, and closely guarded the secrets of their operating system, especially the source code. In any case, it was so large and unwieldy (like NT5) that the study of operating systems was essentially a theoretical science.

John Lion's great leap was to recognise that a practical operating systems course could be based on Unix, which was (at least at that stage) concise and clean. It also came with a licence from pre-breakup AT&T, which permitted use of the source code for "academic purposes". John produced two textbooks for his course - the first (1976) was extracts of the source code, and the second (1977) was his commentary on the workings of that code, based on his lecture notes and experience teaching it to our class.

Due to an anti-trust consent decree, AT&T was prohibited from exploiting its telephony monopoly by competing in the IT industry. The

Unix licence became the first defacto Open Source licence agreement, and collaboration between licensees was encouraged. Single copies of John's books were distributed to other Universities around the world, as well as by AT&T to Unix licensees. They quickly became the underground publishing industry's most copied computer science textbooks; it was a rare example to find a copy which was fewer than 5 or 6 copy generations from an original. Consent for legal publication was finally granted in 1996.

The creation of a pool of graduates trained in the workings of Unix and its internals made possible the great explosion of the IT industry in the 1980s, as it freed hardware innovators from the market tyranny of building a proprietary (and non-standard) operating system. This laid the foundations of the Open Source software phenomenon. John's textbooks are an important contribution to that revolution.

John was a lifelong contributor to the field of Computer Science and education. His illness and death have prematurely ended his enormous contribution to our industry. John Lions will be remembered for his work to create one of the pillars on which the global IT industry stands.

He was a true giant, and is sadly missed.

Chris Maltby

★ ★ ★

John Lions was an Associate Professor in Computer Science at the University of New South Wales from the early '70s until his retirement in the mid '90s. Before that he had worked for Burroughs in Canada, and had degrees from Sydney University and Oxford. He spent a number of sabbaticals at Bell Labs in New Jersey.

While at the University of New South Wales, John introduced a course in Operating Systems, and decided to study the Unix operating system. One of his motivations in doing this was to introduce the students to code which was well written by other people - at the time this was not a common practice, although it is now well accepted - and which implemented a very significant system. In the course of developing notes for this, he wrote an annotation to the source code of Unix, and produced a pair of books (recently republished and translated) including the source code itself. This was a remarkable achievement, and demonstrated the clarity of thought of which he was capable. The books were not available for general distribution at the time, but were probably the most successful illegally copied books ever; there are numerous reports of "5th generation photocopies".

I remember an incident when I was a student of John's; simultaneously helping to run the PDP-11 computer in the then Department of

Computer Science, where the computer was often "locking up" under high load. John took home listings of the current source code, and returned the next morning with details of two race conditions and a potential deadlock in the Unix kernel which might have explained the problem, and indeed when they were fixed the problem went away.

John pulled together a group of people interested in Unix, and when it was later formalised as the Australian Unix Users' Group became the founding president of the organisation.

Within the University of New South Wales there was a battle over centralisation versus distribution of computing resources, which indirectly had a major effect on the autonomy of the Department of Computer Science. John's battle to have Unix accepted as a vehicle for teaching, and later as the subject of teaching, instrumentally led to the increasing importance and independence of the department. Further, the existence of a centre at UNSW helped the formation of similar groups at Melbourne and Sydney Universities.

In my own case, John was my mentor and thesis advisor, and occupied a space in my life, which had been left vacant by the early death of my father. His wife Marianne, his two daughters, as well as many people involved in the academic and research computer community will sadly miss him.

Greg Rose

❖



# The 1999 annual John Lions' student award for work in the area of open systems.

The John Lions award has been instituted to recognise the leading role that John Lions played in bringing UNIX to Australia, the formation of AUUG, and the promotion of the values held by the open systems community.

After Ken Thompson and Dennis Ritchie published a paper "The Unix Time-Sharing System" in May 1974, John Lions decided to base his Operating Systems course around understanding the source code. In addition to that, he founded AUUG as a group of computer scientists who had a common interest in the UNIX Operating System.

Today AUUG has members throughout Australia from industry, commerce, and education and works to promote the benefits of open architectures and standards compliance in languages, operating systems, networks, and applications. AUUG focuses on the latest developments in open systems by the exchange of ideas and solutions through local chapters, the annual conference, local chapter conferences, and its journal.

## Requirements:

- The award is for a full time student at an Australian University.
- The award is for an in-progress or recently completed honours or postgraduate thesis in the area of UNIX and open systems. The judges will be looking for things like interesting uses of open systems technology, contribution to understanding of open systems, programs, tools or knowledge about UNIX and open systems.
- The award is judged on the basis of an approximately one page or 500-word description of the work. The evaluation committee may wish to interview students on the short list for the prize and possibly see a demonstration of the work so far completed.
- The evaluation committee will consist of at least 3 AUUG members, at least one of whom belongs to the AUUG national executive, and optionally a representative from another organisation.
- The decision of the evaluation committee is final and the committee reserves the right to not award the prize if a suitable entry has not been submitted.

**Final date for receipt of entries is 5pm Friday 30th July 1999**

## The prize consists of:

- A cash prize of \$1000
- One year's membership of AUUG
- Announcement of the prize at the main AUUG conference and in AUUGN (the AUUG Journal)
- A certificate
- The winner's name inscribed on a permanent awards board, displayed in the AUUG office and at the main conference

## What sort of work might qualify?

The work will be focussed on software which relates to computer communications, networks, operating systems, or similar. If you are not sure whether your work may qualify, mail:

**Lions\_Award@auug.org.au**

Entries may be submitted by email to **Lions\_Award@auug.org.au** or by post to:

John Lions Student Award  
AUUG  
PO Box 366  
KENSINGTON NSW 2033



# Blackened Voodoo

Michael Paddon  
Michael.Paddon@auug.org.au

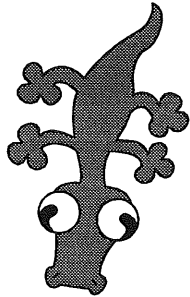
The large stuffed alligator regarded me silently as I stood on Bourbon Street trying to work out who would call a beer "Blackened Voodoo".

Beer is definitely a big thing in the Big Easy. More precisely, anything with an alcohol level greater than zero. When I was a kid, I use to have this nightmare where I'd forget to get dressed in the morning and I'd wind up at school in my pyjamas. Now I felt just like that. Everyone in the street was carrying a bucket of beer (or even more scary... a bucket of daiquiri), and there I was empty-handed and standing out like a damned tourist.

Lizard Boy seemed to enjoy the spectacle of the passing, shouting, staggering mass of humanity, despite having to share a shop window with a selection of obscene Monica Lewinsky t-shirts. At least his glassy stare and toothy grin indicated that something was amusing, but he wasn't letting me in on the joke.

Which left me no choice but to wave goodbye to my reptile friend and ick-off down Bourbon, following my nose to fine food and my ears to great music. The smells of gumbo, the wail of a blues guitar, and the festive crowd wind together into a serpentine, organic experience that twists throughout the quarter. Cajun cooking and live jazz... it doesn't get much better than this.

I wonder if Australian customs let you bring stuffed alligators into the country?



\* \* \*

On to voodoo of another sort. Despite the fun that is New Orleans, I am in town for the 3rd USENIX Symposium on Operating Systems Design and Implementation. As I write this, the conference is only about half over, and yet the completely unreasonable AUUGN editor is demanding copy NOW. [Editor's Note: do I get an Alligator?] It's like he had a deadline or something. So you can consider this to be a sort of interim report. At the least, it will give you some idea of the flavour of a USENIX event.

The first day of the event was reserved for tutorials. Being of a security bent, I attended Marcus Ranum's "Building Security (for Developers)". This was a superb tutorial covering not only the key mechanisms of security interesting to a developer, but putting it into the context of surviving the real world. The interesting thing about security is that you have never finished learning, and much of the ongoing process is revisiting old knowledge and techniques

with a new perspective. I certainly came away much the richer for having attended, and I can unhesitatingly recommend Marcus' tutorial to novice and experienced programmer alike.

The other tutorial, presented by Jamie Halrihan, covered the internals of Windows/NT and drew a strong attendance and good reviews. So far throughout the conference there has been evidence of a strong interest in NT, not as a replacement for Unix but as a deployment platform in conjunction in a heterogeneous environment. Interestingly, no-one has had anything good at all to say about NT's robustness or security profile, despite the fact that it is being relied on more heavily.

The tutorial attendance levels did not prepare me for the turn out for the conference proper. I'd estimate the crowd at about 300, which is astounding for a specialist conference like this. Listening to the presentations and talking to people in the breaks, it became clear that operating systems research and development is alive and thriving in the US, both in the academic and commercial arenas.

The keynote for day one was presented by Jim Gettys, whom some will recall for being at least partially responsible for the design work on HTTP/NG. He used that wonderful little poem about blind men each feeling a different part of an elephant and describing radically divergent conclusions as a metaphor for the many efforts people are making to optimise the use of HTTP. Protocol design, versus caching, versus browser smarts, versus extensions all mix into a complex landscape, where optimising one thing to the exclusion of others is likely to be counter-productive. Jim didn't claim to be able to see the elephant much better than the rest of us, but his analysis did highlight the interesting part challenges ahead.

The rest of the day was filled by two sessions: I/O and Resource Management. These themes underline the fact that in the OS space, no problem is ever solved. Rather, the trade off points move as new applications and services push the boundaries of what currently deployed systems can achieve.

All the papers were excellent, and I suggest contacting USENIX for proceedings if you are interested. However, several papers particularly caught my attention.

"Automatic I/O Hint Generation" (Chang and Gibson), proposed that speculative execution of disk bound applications yields hints that can allow you to pre-fetch data from disk before each read occurs. This is a rather cool idea, and is achieved in practice by soaking up spare cycles to execute a "shadow" copy of the application at the same time as the real one is running. The authors have produced a tool that automates this procedure and the test results look extremely promising.



"IO-Lite: A unified I/O Buffering and Caching System" (Vivek, Druschel and Zwaenepoel) revisited the problem that memory to memory copies kill system performance. Their mechanism of immutable buffers to share a single copy of data throughout the kernel is a very simple and elegant approach. Frankly, the only real surprise is that current generation systems haven't tackled this better already, especially with the network centricity of many applications nowadays.

"Self Paging in the Nemesis Operating System" (Hand) examined the rather radical idea of moving VM management into each application. This allows each process to manage its own physical frames and access patterns in an optimised way, while at the same time insulating it from the effects of other process' memory system demands. This is a very effective way of providing the quality guarantees that modern multimedia requires, but I suspect that this is a direct trade off against global efficiency.

The day wound up with a panel session on virtual machines and operating systems. This was, to put it mildly, a lively debate indeed. Much of the panel were somewhat Java centric in outlook, and for a while the discussion seemed to circle around whether Java was an OS or, alternatively, should you write your operating system in Java. Then Rob Pike eloquently described the problems Lucent had encountered when binding the execution environment and the operating system to tightly together in Inferno. I must admit to being quite swayed by Pike's logic. Binding an operating system to any specific machine seems to me to be what's wrong with the Wintel world, and everything that the last 30 years of Unix development has eschewed. In the final analysis, everyone was entertained and educated by the debate, although (of course) nothing was settled.

The second day's sessions focussed on the areas of Kernels, Real-Time and Distributed Systems.

The best hack award definitely went to "Fine Grained Dynamic Instrumentation of Commodity Operating Systems Kernels" (Tamches and Miller) for their method of on-the-fly patching of running kernels with arbitrary machine code. I haven't seen that done in a long while.

I also found "A Feedback-driven Proportion Allocator for Real-Rate Scheduling" (Steere, Goel, Gruenberg, MacNamee, Pu and Walpole) quite interesting. This put forward the idea that applications should be resource scheduled by a "progress" metric. By providing an appropriate API, applications can inform the system of their progress, or more generically the system can calculate it based on information to hand. This allows resources to be scheduled to important tasks to maximise their progress, without having to know ahead of time how they will act. This seems to me to be much better than the traditional real time system that asks you to predict what your application needs, and too bad if you get it wrong. Unfortunately, as a member of the audience pointed out, the progress API is a

great window for a denial of service attack.

Day two wrapped up with about a dozen short work in progress presentations. Enough information to make your head spin.

Day three is yet to happen... with sessions on Virtual Memory and Filesystems. I suspect that it will as interesting and informative as what has gone before.

The threads that seem to consistently run through the conference are quality of service, system partitioning, security and server centric performance. The Internet, and particularly the upcoming killer audio/video applications are clearly dominating and guiding the current evolution of operating systems. There also seems to be a renewed interest in embedded OSs - again due to the expected wide deployment of consumer hardware like set top boxes.

Any good conference leaves you with more questions than answers, and I'd like to leave you with one that has been bothering me. I'd noticed my bottle of Blackened Voodoo had an email address printed on the label. What on earth would you email to a brewery?

❖

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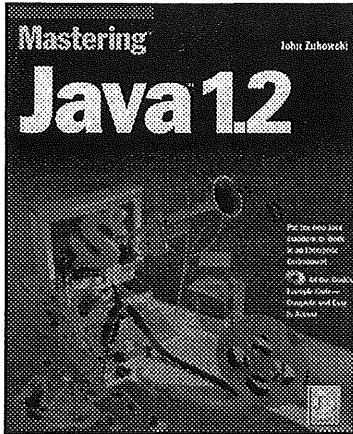
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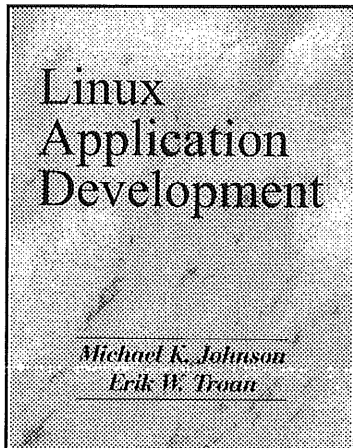
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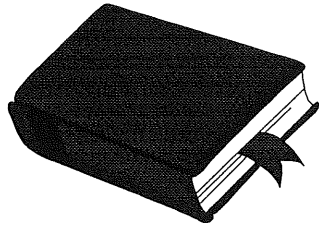
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# Book Reviews

Sub-editor:  
Mark Neely  
mpn@infolution.com.au



## **DIGITAL ARMAGEDDON 2000: HOW TO STOP THE MILLENNIUM BUG BEFORE IT STOPS YOUR BUSINESS**

*Good, J*  
Prentice Hall, 1998  
98 pages

Reviewer:  
Mark Neely  
mpn@infolution.com.au

This is a short review of a short but very readable book.

Good did not set out to write a technical guide to the Millennium Bug problem. Rather, he has compiled a very simple, reader-friendly guide to the issues raised by Y2K for both business and home users.

After explaining the cause of the Y2K problem, Good discusses the likely impact (after all, much of this is theoretical) on both business and personal (i.e. home) computer systems.

The technical details are light but accurate. Good explains the potential danger points of affected computer systems (at both the hardware and software level), and provides pointers and action checklists to assist readers to develop response strategies.

The book also covers "flow-on" Y2K problems. For example, while a small manufacturing company may check and upgrade its systems for Y2K compliance, it only takes one of its suppliers to ignore the problem to cause mayhem. In a business environment, if your suppliers cannot supply you, you are effectively out of business, regardless of how well your systems are working!

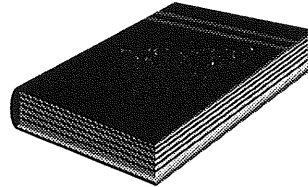
In a similar vein, the (often more serious) problems caused by non-Y2K compliant code in embedded systems is also covered.

To round off the coverage, Good canvasses the legal issues raised by Y2K, potential global impacts and whom companies can turn to for advice and help.

Of course, as the book was printed late last year, it contains no coverage of recent Federal government moves to mandate disclosure of

certain Y2K issues, and so readers would be wise to keep an eye on computing-related publications for further developments in this area.

In short, while this book lacks technical depth for those on "the front lines", it is an excellent guide for those in upper management still coming to grips with the scope and nature of the Y2K problem, as well as those charged with formulating strategies to meet the challenge posed by the Millennium bug.



## **NETWORKING ESSENTIALS UNLEASHED**

*Sportack, M et. al.*  
Sams, 1998  
575 pages

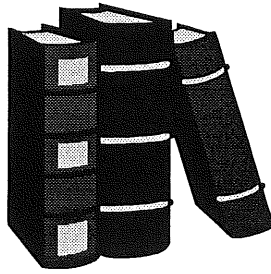
Reviewer:  
David M. Williams  
University of Newcastle  
dave@qed.newcastle.edu.au

This book is a comprehensive reference to fundamental concepts in networking, targeted at computing professionals. It covers the OSI reference model, and explains different network architectures and topologies, operating systems, network administration, and troubleshooting. Topics also include how to build local and wide area networks.

I've always found the 'Unleashed' books to be of high quality, and this is no exception. It covers the theory and practical issues, but more importantly, prepares the reader for thinking their way through challenges that will undoubtedly arise in networked environments.

I must admit to slight uncertainty about the title. Immediately, 'Networking Essentials' makes me think of the Microsoft Certified Systems Engineer examinations, yet this book makes no explicit claim to be a preparation guide for such certification. The back cover blurb does claim that "It will help you prepare for any test on the essentials of networking", but there are no stronger claims or associations. I think then, that any person who is seeking a book to help gain professional certification, may be best served by finding a title they can be more confident about.

That is, I do think this book is very good, and any person who wishes to learn about modern networking would find it of value. Yet, the title really does conjure up thoughts of certification, perhaps deliberately. This is a shame, because it itself is unconfident about the extent of assistance it can be with certification exams, and certainly, it does not give sample questions or tests. If this slant to the title is intended, then I think the publishers may have outdone themselves.



## **AGILE NETWORKING**

*Metes G, Gundry J & Bradish P*

*Prentice Hall: 1997*

*ISBN: 0137601255*

Reviewer:  
Fiona Honor  
fiona.honor@nt.gov.au

Open communication across the whole company; managers that recognise they are there to serve the work team; CEOs that invite staff to communicate with them directly; products that truly offer valued solutions; the ability to respond to unpredictable changes with speed and efficiency.

Is any of this possible?

Agile Networking sets out to provide the strategies required to make the above scenarios a reality. The book focuses on how applying agility to a company's networking processes can assist that enterprise thrive.

According to the Collins New English Dictionary, to be agile is to be "quick in movement: nimble". Thus the aim of the book is to demonstrate why and when nimble networking is essential and how it might be created. The term "networking" is used in a broader sense, including human, business and technology processes.

The book outlines a set of business strategies designed for the modern enterprise wishing to keep pace with the turbulent and ever changing business environment. The strategies are based on four key principles: enriching the customer, mastering change, leveraging resources and cooperating to compete.

The authors detail their arguments as they unfurl their strategy blueprint, pausing occasionally to recognise and explain apparent shortcomings.

Despite having three authors, the writing style is consistent and the book flows effortlessly. It is divided into four logical sections:

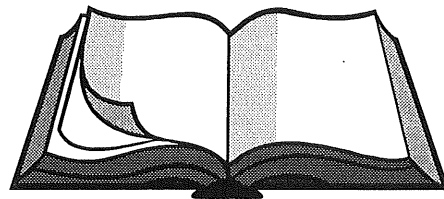
Part One explains the four principles of agility. Part Two, titled Agile Networking Capabilities, explores group communication, Intranet publishing and knowledge management. Of particular interest are the arguments for group forums rather than email discussions and how real knowledge can be nurtured rather than managed. There is also a section that discusses how to measure the level of agility in your organisation.

Part Three concentrates on agile operations. It pushes the idea of agile teaming as opposed to virtual teaming. The essential difference between the two is that agile teams are created to meet a particular challenge, are designed to respond to change and are quickly formed and disbanded. Part Three also looks specifically at learning and law-related services and includes an interesting chapter on agile management.

The final section, Part Four, presents the concept of agile networked alliances, and explores the commercial realities of agile networks, particularly online storefronts. Of interest to many AUUG members will be the discussion of agile networked education, which discusses the experiences of the California State University.

Agile Networking is an invaluable strategic resource for anybody working in an industry where responding quickly to change is essential to success. While the emphasis is on how networks can be optimised to provide fast and efficient responses to change, the book does not provide a great deal of technical information. This may leave some readers puzzled as to how to immediately apply the principles espoused to their workplace. However, there are enough practical examples to kick-start individual initiatives.

Of note, the agility strategies outlined in the book were developed in response to an appeal by the US Congress to decipher how its manufacturing industries can be more competitive on the global market. Consequently, The Agility Forum was established in 1991 and continues to research and promote agility. The Web site for Agility International, including further resources to compliment Agile Networking, is at <http://www.agility.co.uk/ai>.



## **WINDOWS NT AUTOMATED DEPLOYMENT AND CUSTOMIZATION**

*Puckett, R.*

*Macmillan Technical Publishing, 1998*

*306 pages ISBN: 1578700450*

Reviewer:  
David M. Williams  
University of Newcastle  
dave@qed.newcastle.edu.au

'Windows NT Automated deployment and customisation', as the name suggests, is concerned with automating the deployment and configuration of a Windows NT network - an 'unattended installation', if you will. In particular, it covers the process of planning, creating and deploying automated installations of Windows NT

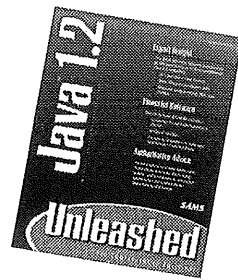
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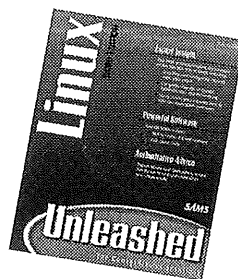
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Workstation. The techniques can be applied to automated Windows NT Server installations, but this is not a major focus of the author.

Microsoft has a white paper on this topic, "The guide to automating Windows NT setup", which is helpful, but stops short of addressing more complicated scenarios and questions. Or rather, the 'out-of-the-box' deployment tools stop short of providing the necessary functionality for these scenarios and questions.

Microsoft has recognised the need for better tools, and has released Windows NT resource kits for both the workstation and server incarnations, and a further two resource kits supplements. The main focus of these kits and supplements has not been automated deployment, but certainly the support for automated deployment has been enhanced. These have not been documented, at least, in another accessible and helpful white paper. The information is 'out there' but not until Puckett's book have I been aware of it all in one consistent and cohesive collection.

The book is divided into three sections:

Part I discusses the basic configuration of an automated deployment. This is very straightforward and essentially outlines issues that an administrator must be aware of; namely, the construction of a distribution share point and the principal files necessary; the creation of UNATTEND.TXT "answer files"; and finally a guide to adding, customising, or removing the accessories and other items that are included with the Windows NT operating system itself. This is particularly important, because this can also include the addition of custom device driver files for specific hardware needs.

Part II details more advanced topics, including: adding additional applications to the install process such as service packs (particularly those applications which are not normally 'silent' in their installation), automating security changes to the operating system and user environment, augmenting security through custom system policies and modified default user profiles and the automation and scheduling of maintenance and update options provided by Windows NT. This section is heavier reading than the first, including as it does sections on registry editing and the enforcing of policies, but examples and helpful italicised tips abound, which all make the process much less fearful.

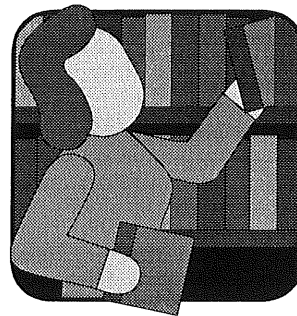
Finally, Part III lists useful reference data, such as native NT tools, useful registry sections, and details of available services and protocols, providing the informed administrator with the ability to discern that which should be kept, removed or modified.

I think this book is excellent, and any administrator who finds themselves responsible for a large network of machines would find it to be a tremendous resource. The book describes not only how to make an unattended install work, but

how to do it well - how to configure devices and security, and deploy other applications with the operating system, and then how to schedule automated maintenance and updates. This knowledge in this book has the potential to save a lot of time and frustration, and can help create a consistent network environment.

This title is the first in a new series, the "Windows NT Technical Library". It is a nifty and attractive book that takes up little desk space, but certainly contains a wealth of information.

According to the back cover blurb, the series is to be a set of guides that focus on specific aspects of Windows NT technology, providing networking professionals with detailed, proven solutions to their problems. I think this first title lives up to such a description, and I look forward to seeing other works in the series.



## **THE JAVA TUTORIAL: OBJECT-ORIENTED PROGRAMMING FOR THE INTERNET**

*Campione, M & Walrath, K*  
*2nd Edition*  
*Addison-Wesley, 1998*  
*ISBN 0-201-31007-4*

Reviewer:  
Paul A. Watters  
Department of Computing  
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It is not often the case that you can get something for free, and then decide it's good enough to pay for. The "Java Tutorial, 2nd Edition" by Campione and Walrath is a book that falls squarely into this category: it is an imprint of the very successful Java tutorial available (free) at the Java web site:

<http://java.sun.com/docs/books/tutorial/index.html>

The book is written in a very readable, friendly and often humorous style that I found enjoyable (this style is maintained in both the online and paper versions of the book).

The volume is divided into seven main "trails". Each trail is quite self-contained, but can also be read sequentially for a complete coverage of all aspects of Java programming. Topics range from how to run the Java compiler to discussions of advanced object-oriented concepts and their implementation.

Beginners would gain the most from reading the early trails and referring to the online examples, while more experienced users would benefit from the discussion of networking and an elaboration of the differences between JDK 1.0.2 and JDK 1.1. I found the strategies for graphics and animation the most useful section in later trails.

Although I wouldn't normally recommend the print version of a book that is available electronically - as the use of hypertext and online searching is preferable in most cases - this book has a number of innovative design features that contribute to the largely seamless interface with the online version. The authors went so far as to include a "toolbar" on every page for those who feel at home with a screen.

The URL for each online chapter is cross-referenced in the paper version above the title of each chapter. In addition, each chapter contains "links" to relevant material in other trails, which can be followed for further information. This is as close to hypertext in a book that I've ever seen.

The second edition fully integrates the many changes from the JDK 1.0.2 to the JDK 1.1 (and includes a copy of the JDK for Sun Solaris and Microsoft Windows on a CD at the back of the book). These changes are discussed in-depth in

the text, from improvements in garbage collection to the new JAR platform independent file formats.

If this book is available electronically for free, why would you decide to pay for it? Well, I can think of three good reasons:

- You're working away from the Internet on a machine that doesn't have a CD-ROM (but you still need to write that applet by Monday...).

- You want to absorb the 964 pages of introductory Java by learning everything about it before going near a keyboard.

- You are a highly moral person who wants to reward the authors and publishers for providing such an excellent resource for free on the Internet in an era of mindless commercialism.

None of these is a trivial reason, and there are potentially more general issues about the ergonomics of the printed page versus the high-frequency computer monitor, which might also be considered by book-lovers. I would not hesitate in recommending this book as a reference work for the bookshelf and CD-rack of beginners and experienced Java programmers alike.

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# From the pages of **unigram·X**

Compiled by:  
Günther Feureisen  
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\* \* \*

## SUN PLANS OPEN SOURCE SOLARIS

Sun Microsystems Inc is working on a strategy that will enable it to move its Solaris Unix to the open source development model without stepping on the toes of the Linux community and being branded the evil empire. It says that its dilemma is that "Linux is good for Solaris, but that Linux is not a corporate community" and "our intentions must not be misunderstood." One route would be to turn over Solaris intellectual property and source for development by the open source community but retain all branding, packaging and testing considerations, as with its Java community source model. However, Solaris isn't as young as Java and Sun is not sure what the effect might be on its large code set and hefty installed base. Other major considerations include the paper chase of royalty, IP and branding rights in the agreements it has made since buying out its Unix license from Novell Inc in 1994 for \$82.5m. It is looking for anything that could prevent it taking Solaris open source, such as rights that may belong to other companies. Sun, which is already making Solaris APIs compatible with Linux, says it is also still working out how it will market the initiative and what image it wants to present. It expects to move quickly but until there's a method "we can't say bombs away," it says.

\* \* \*

## WINGZ ANALYTICAL TOOLS OFFERED AS LINUX FREWARE

London-based Investment Intelligence Systems Group has released a version of its Wingz graphical spreadsheet for the Linux platform as freeware. Wingz Professional version 3.0, which includes the associated HyperScript analytical development environment and HyperSheet runtime deployment module, has been released without licensing fees because IISG says it wants to make sure the product is widely available on Linux. Wingz 3.0 is aimed at "sophisticated knowledge workers" in industries such as engineering, aerospace, telecommunications, chemistry, manufacturing and finance, and is also available on Windows, Mac and Unix platforms, and portable between them. HyperScript is claimed to be suitable for developing data driven EIS and DSS applications. Individual licenses for the Linux version are free for non-commercial use. IISG -

whose main business is developing deal capture and other financial and investment applications, kept the Wingz product alive by acquiring the product from its original developers, Informix Corp, back in 1995. Wingz was originally developed in 1987, for Apple's ill-fated A/UX Unix and for the short-lived Next Inc box. IISG introduced new Unix and Macintosh versions in 1996.

\* \* \*

## SUN SOLARIS UP ON MERCED SDK

Sun Microsystems Inc says it has completed a port of its 64-bit Solaris Unix to the Intel IA-64 pre-silicon software development environment for Merced. It finished the work in November but it has taken a few weeks to get supportive comments from its key OEMs - NCR, Siemens, Fujitsu and Toshiba - into shape. It will make the cut - which took nine months to develop - available to select ISVs and its Intel system partners by mid-year. Santa Cruz Operation Inc says Sun is about one year behind where its own UnixWare-for-Merced Unix development is, having announced its milestone at the end of 1997. The "nine months in their story points to the fact they did not even start until April last year," said SCO, to which Sun responded: "At least we don't have to fake it on 32-bits."

\* \* \*

## IBM TO SUPPORT LINUX ON PC, RS/6000 PLATFORMS

By Timothy Prickett-Morgan

Next week at LinuxWorld in San Jose, IBM will formally announce its plans to support Linux on a wide range of PC and RS/6000 workstations and servers. The details of IBM's plans are still a little thin, but IBM has formed an alliance with Red Hat Software, Inc that allows IBM's business partners to resell Red Hat Linux on IBM PC 300 desktops, IntelliStation NT workstations, ThinkPad portables and Netfinity servers. Under the agreement, which was announced last Thursday, IBM and Red Hat will collaborate to optimize Red Hat Linux for IBM PC hardware; this means programmers at IBM and Red Hat will work together to write better video and peripheral card drivers -- features that are usually distinct among PC hardware vendors - - as well as maximizing performance, reliability and security for IBM's Intel platforms. The two companies plan to work together to bring enterprise-class technical and marketing support to Red Hat Linux, and Red Hat Software will be charged with certifying IBM hardware and providing customer training. Rumor has it that IBM's commitment to Linux will go even further. According to reports in PC Week and The Wall Street Journal, IBM will also unveil at LinuxWorld a plan to provide its own implementation of Linux on its PowerPC-based RS/6000s. The Linux 2.2 kernel already supports the PowerPC chip, and



theoretically there is no reason (other than insanity) that it could not also run on an AS/400, which has all the PowerPC instructions plus a few hundred of its own. Apparently, IBM will also support RS/6000 implementations of other vendors' compiled Linux operating systems. Caldera, for one, will ship its OpenLinux 2.x, which includes the new 2.2 kernel, and it would not be surprising to see it supported immediately on RS/6000 workstations and low-end servers. It is unlikely that Linux will be supported on high-end RS/6000 SMP servers, and it probably won't be supported on its SP parallel servers either (although it would be interesting to see that happen). Naysayers have been quick to jump on IBM for supporting multiple implementations of Linux on its Intel-based and PowerPC-based machines, saying that the increasing fragmentation of Linux will essentially kill it. While there is no doubt that fragmentation and dissembling among Unix vendors killed Unix unification efforts in the mid-1990s when the Open Software Foundation and Unix International were fighting each other for control of the Unix "standard" (a very loose term, indeed), the competition between the various Linux software providers is not exactly an analogous situation. The many past (and current) Unixes have truly been different operating systems, mostly incompatible from each other except for function names and certainly not compatible at the binary level when it comes to applications. The various Linux implementations are compatible (within a hardware platform, that is), all based on the same open source code, each with extra goodies and different levels of support for them. While the Linux operating system is not as open as Java and its virtual machine, it is still nonetheless the most open environment short of Java. Yes, having the same Linux run on different hardware platforms with their binary incompatibilities does complicate things, but so do Java just-in-time compilers, which is the real way that Java applications will be written. No one believes for a second that companies will run uncompiled Java, so even this distinction doesn't really hold up well. The simple fact is that the diversity that comes from having many Linux vendors providing code and support on many different and incompatible platforms is just as vital for the fledgling Linux market as is open source code and nerds who constantly tweak it because they have high IQs and nothing better to do with them. No one knows for sure what Linux features and add-ons will sell (or be requested for free as the case may be), what features will work best (these are not always the same thing) or what features will fail for technical, economic or marketing reasons. The beauty of the Linux situation is that the market gets to decide in brutal fashion what is best, just as we would if Microsoft didn't have a near monopoly on the desktop. And IBM, oddly enough, for once seems to be promoting diversity. Others will have to follow. For instance, LinuxCare, a new company that will announce traditional 24x7 enterprise support for all the major Linux variants will make its debut at LinuxWorld next week, too. LinuxCare is being formed by independent consultants who are members of the San Francisco Bay Area Linux

Users Group and who have also been making money supporting Linux at major companies in the area. Red Hat has to be pretty concerned about how that crimps its style and opportunities to get venture capital as well as revenues, especially because increasingly companies, unlike Intel which stood solely behind Red Hat, are focusing on all the major Linux variants. And for good reason. Caldera's OpenLinux, for instance, has better integration with NetWare and Novell Directory Services as well as a better graphical interface. The point is, as companies like IBM and LinuxCare prop up all the popular Linux options, very soon there will be a Linux market, not just a Linux phenomenon. Of course, knowing IBM, the company will have intellectual property issues and will seek to control, as much as possible, what work gets done to prop up Linux on its own iron. To IBM's credit, it has worked in good faith on the Apache Web server project and code changes it has helped instigate are available in open source form. But to its discredit, some adjunct programs, specifically caching software to help Apache run better on Windows NT, is not available in open source format but only through the purchase of IBM's WebSphere Web application server. Just how much of IBM's work on Linux makes it into the open source and how hard it works to make Linux run well on RS/6000 workstations and servers -- especially in light of its Monterey64 development project with SCO and Sequent -- is anybody's guess. All IBM knows for sure is that it can't be too late to the Linux party, even if that means self-impact for the RS/6000 business.

\* \* \*

## SUN CCNUMA STRATEGY

By William Fellows

Students at six US universities including MIT are test driving version 1.0 of Sun Microsystems Inc's distributed shared memory technology running on Ultra Enterprise 6000 servers connected with network interface cards Sun that has developed to implement its ccNUMA. Sun, which already has a second cut of the technologies running in house, will probably begin introducing the technology in 1999. If it can, it will do it in such a way that users and ISVs will not know any difference. The key, it says is to extend the current SMP symmetric multiprocessing model in which "all processors are created equally" to memory, such that "all memory is created equally." It says it categorically will not break the SMP model like ccNUMA server vendors Silicon Graphics or Sequent have done by introducing latency 'bug'. Notice it says, how quiet Hewlett-Packard Co has been about the 'bug' it's introducing to extend the V class to 128-ways. Sun says its ccNUMA version 1.0 latencies are of cache misses below Sequent's one-in-five or one-in-ten but have been deliberately kept high enough for students to be able to test and examine behavior clearly. With version 2.0 of the technologies, Sun says it believes that latencies are now at the point at which they don't matter to applications, in much the same way that programs running on current

SMP machines do not care about the latencies associated with accessing L1 and L2 caches. As such, Sun says the ccNUMA technology it eventually introduces will not require users or ISVs to alter their applications in any way. That's why it has so much trouble articulating its distributed shared memory strategy. As far as it's concerned, it's not going to break the SMP model like other vendors. It says remarks made at a recent analyst meeting in Rome about categorically not doing ccNUMA set off all kinds of alarm bells internally and concretized the extent of the problem. The aim of ccNUMA is extensibility first and foremost. Sun does not expect the work to be used to create more massive systems in the first instance but will allow users to add processing power incrementally. Nevertheless, "he who has the fattest node wins," Sun believes. The SMP model is being built out to its limits. ccNUMA takes over from there. Sun says it clearly has the fattest node. It's in no rush to introduce ccNUMA because the E10000 Starfires give it a lot of room to maneuver. A lot more than HP, Sequent or SGI, which have all already been burnt by ccNUMA. Sun says the purchase of the Cray SuperServer business from SGI actually gave it the potential to get ccNUMA technology to market very quickly if it had so chosen. It admires SGI's ccNUMA-based Origin server work, but believes the company is getting killed by the way it swapped out conventional SMP for a ccNUMA model that is still not complete. Sun says that it has been working on several forms of ccNUMA technologies for two or three years. The engineering team it hired from Thinking Machines Corp and technology from defunct Kendall square Research plus other Sun divisions have all contributed work. Indeed some preparatory work has already been delivered in the new Solaris 7 release it says, with more to follow in Solaris 8.

\* \* \*

## **INTEL PREVIEWES PENTIUM III AS AMD PREPARES K6-III**

Intel Corp previewed the Pentium III processor last week at a major event in San Jose, in advance of its official launch this Tuesday, February 23rd at the Intel Developer's Forum. Some 200 partners were on hand at the event to preview software and other products supporting the new chip, while Intel emphasized the faster 3D graphics and speech recognition capabilities enabled by the new Katmai multimedia instructions. The chip itself will come in 450MHz and 500MHz clock speeds, with a 550MHz version widely expected in the second quarter. Intel is spending some \$300m on the marketing campaign for the Pentium III, which it hopes will help shift the increasing trend towards lower-end products showing up in its sales figures back up towards higher margin products. The Katmai instructions, which include Streaming SIMD single-instruction multiple data extensions, supersede MMX, which despite being the focus of a successful marketing campaign, had little effect on applications performance, largely

because tools to optimize program weren't made available. This time, Intel is making sure the latest version of its Vtune Performance Enhancement Environment supports the new Streaming SIMD Extensions along with other capabilities of the processor. Vtune 4.0 supports, C, C++, Java, Fortran, Borland Delphi and Microsoft Visual Basic, and includes a native Java compiler called the ByteCode Accelerator. It ships in March, for \$429 per copy, \$169 for upgrades. At the San Jose event, Intel and its partners demonstrated such applications as 3D web searching, multiple path 3D movies, video telephony, digital imaging, e-commerce sites with audio, video and 3D content, and software development tools for digital content creation, all optimized for the new instructions. Computer privacy advocates are still suspicious of one of the Pentium III's new features, the PSN selectable processor serial number embedded in the chip, which enables internet content providers to gather information about visitors to their sites. Intel emphasized that the feature would be controlled by users, and is advising its OEMs to have the feature set in default "off" position before shipments. Meanwhile, Advanced Micro Devices Inc is expected to launch its K6-III chip this Monday, on the day before the official Pentium III launch. The K6-III may rival the Pentium III in performance, and AMD is expected to undercut Intel's pricing. AMD's share of the Intel-compatible processor market rose from 6.7% in the first quarter of 1998 to 16.1% by the fourth quarter, while Intel's share declined from 85.3% down to 76.1%, according to figures from Mercury Research. But AMD will not be able to match Intel in immediate production capacity. AMD blamed price reductions at Intel as the reason behind its expectations of posting an operating loss in its current quarter. Meanwhile, Intel cut prices once again on Tuesday, reducing the price of its low-end Celeron chip by up to 24%. The 400MHz Celeron was reduced 16% to \$133 from \$158. Prices on the 366MHz part were reduced 24% to \$93 from \$123. And prices for the 333MHz version went down 11% to \$63 from \$71.

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## **WHITE PAPER SAYS OPEN SOURCE SOFTWARE HELPS ECONOMY**

Government policy makers could curb Microsoft's monopoly, slash the government's Y2K remediation bill and improve computer security by promoting wider use of open source software, a new study suggests. The report was conducted by NetAction, a San Francisco non-profit outfit last seen getting on Microsoft's case in August 1998. The new white paper recommends several low-cost steps government could take to promote the use of open source software - through its purchasing policies, for example, or by publishing the source code to software that has already been developed for government use.

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## MICROSOFT WELCOMES THE LINUX COMMUNITY, TO THE CAR PARK

By Rachel Chalmers

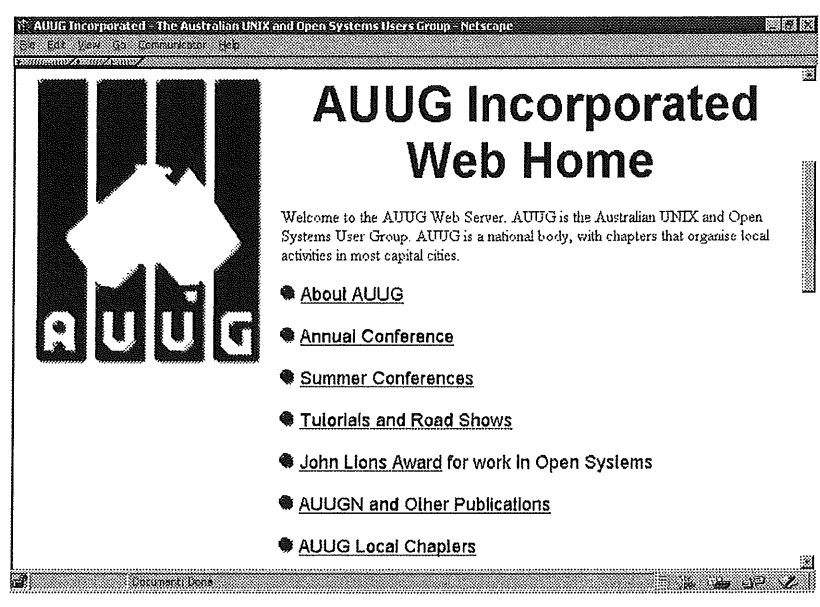
On Monday February 15, more than one hundred users of non-Microsoft operating systems, their friends and supporters and a mob of journalists walked from the car park of the local Denny's to the Microsoft campus in Foster City, California. Dubbed Windows Refund Day, the march was part grassroots consumer movement and part media prank. For the core group, the mission was to exercise their right to reject Microsoft's End User License Agreement (EULA), a contract which ships with every personal computer that is sold pre-installed with the Windows operating systems. The demonstrators - not part of any official body, they describe themselves as an "ad-hocracy" - say they do not accept the EULA. They say they booted their machines from alternative operating systems such as Linux, FreeBSD and BeOS, and that they reformatted their hard drives immediately. They never used Windows and as such they believe they are entitled to a refund for the price of the Windows user license. Brandishing penguins (the Linux 2.0 mascot), demons (the mascot for BSD), red hats (one Linux company is called Red Hat Inc) and the American flag, the users marched to Microsoft to ask for their money back. With them was Eric Raymond, author of "The Cathedral and the Bazaar", a paper which helped mobilize the open source software movement. Because Raymond recently featured in a comic strip parody of Star Wars, someone had brought along a brown Jedi robe for him to wear. Dressed as Obi-Wan Kenobi he held up his hands and said: "The source is strong in these ones!" When the march arrived at Microsoft's offices, a sign directed the "Linux Event" to the multi-storey carpark next door. The top floor of the carpark was already crowded with more media, who leaned over the parapet taking pictures. "May the source be with you!" Raymond called up to them. A lone voice replied: "And also with you!" The marchers climbed through the carpark to be greeted by dozens of cameras, a small lemonade stand and a banner which read: "Microsoft welcomes the Linux community!" The long march in the hot sun had left the demonstrators thirsty, and because Microsoft apparently underestimated how many would turn up, supplies of lemonade were quickly exhausted. There were plenty of copies of Microsoft's official statement, however. It read in part: "We understand that part of your purpose today is to request a refund for the version of the Windows operating system that came preinstalled on your personal computer. The license agreement that accompanies the version of Windows preinstalled on new PCs clearly states that if users for some reason choose not to agree to that license, they should contact their PC maker to address this issue." In other words, Microsoft's position has not changed since its first official comment on the Refund movement, when company spokesperson, Adam Sohn dismissed it as "a tempest in a teapot." When Charles Earnest, the unfortunate Microsoftie charged with handing out this unsatisfying statement, was overwhelmed by questions, he retreated and sent out the

company's big gun: Rob Bennett, a group product manager for Windows. A cool and collected Bennett reiterated the party line: users who do not accept the terms of the EULA should contact the manufacturer of their PC. Bennett would not divulge whether or not Microsoft would reimburse any PC manufacturers who offered refunds, saying the terms of Microsoft's contracts with PC manufacturers are "under NDA". Like Sohn before him, Bennett explained that the reason it is virtually impossible to purchase an Intel-based laptop without Windows pre-installed is because OEMs have concluded that there is "no consumer demand" for such a beast.

### Not passing the buck

He was immediately shouted down by consumers demanding exactly that. "We're not passing the buck," Bennett concluded. The demonstrators were then herded off the carpark roof. So this is how Microsoft welcomes the Linux community? "You've got to understand we have building management," said a representative of Microsoft's PR firm, Waggner Edstrom, "if it weren't for that, we'd happily stay out here all day." After their attempts to enter Microsoft's offices, rather than its car park, were rebuffed, the demonstrators stood in the courtyard and pointed and laughed at Microsoft in unison. Refund Day organizer Rick Moen, an independent networking contractor who uses Linux and FreeBSD in his work, said he was disappointed that Microsoft hadn't handed out refund checks on the spot. "It would have been great publicity for them," he explained. But he feels the groundswell of support for Windows Refund Day has caught the Redmond software giant on the back foot. "We have a message that's very simple and clear and that people instinctively respond to as a fair one," Moen said, "that makes Microsoft very nervous." While Eric Raymond was outspoken in his calls for a class action lawsuit, and Moen admits that "hungry lawyers" have been in touch, Moen's own preference for the next act is a series of small claims - for Microsoft, the legal and PR equivalent of the death of a thousand cuts. But even if a grassroots consumer movement could force Microsoft to back down on the EULA, such an achievement is unlikely to affect corporate users. Refund movement organizers admit that PC manufacturers are already willing to ship "raw" machines, without pre-loaded Windows, for orders in the region of several hundred boxes. In the end it is only small businesses and consumers - Microsoft's traditional constituency - who, in the words of Refund Day organizer Nick Moffit: "find themselves carrying the burden of an operating system they don't want." That might yet change. VA Research Linux Systems Inc, whose president and CEO Larry Augustin and director of marketing Chris DiBona were both prominent members of the march, claims to have found a source for raw laptops. VA promises to ship them with Linux and without Windows in "two or three months".

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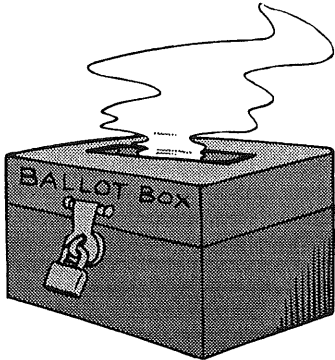


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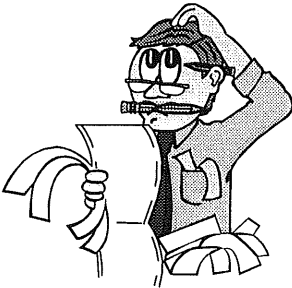


Help make AUUG the kind of organisation you want it to be – nominate for a position on the AUUG Management Committee! The call for nominations and a sample nomination form can be found on the next few pages. The nomination form should be returned to AUUG by the 14<sup>th</sup> of April.

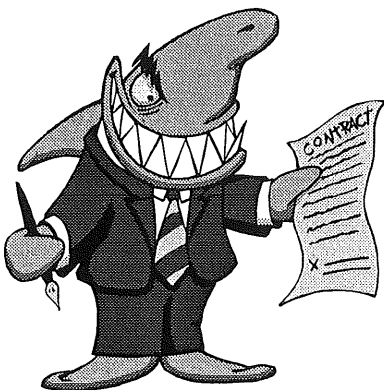
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(3) Name: \_\_\_\_\_ AUUG Member #: \_\_\_\_\_

being current financial members of AUUG Incorporated do hereby nominate:

\_\_\_\_\_ for the following position(s):

(Strike out positions for which nomination is not desired. Each person may be elected to at most one position, and election shall be determined in the order shown on this nomination form.)

President

Vice President

Secretary

Treasurer

Ordinary Management Committee Member (5 positions)

Returning Officer

Assistant Returning Officer

Signed (1) \_\_\_\_\_ Date \_\_\_\_\_

Signed (2) \_\_\_\_\_ Date \_\_\_\_\_

Signed (3) \_\_\_\_\_ Date \_\_\_\_\_

I, Name: \_\_\_\_\_ AUUG Member #: \_\_\_\_\_

do hereby consent to my nomination to the above position(s), and declare that I am currently a financial ordinary member of AUUG Incorporated.

Signed \_\_\_\_\_ Date \_\_\_\_\_

# AUUG Incorporated 1999 Annual Elections Call for Nominations

---

Nominations are invited for the following positions within AUUG Incorporated:

President  
Vice President  
Secretary  
Treasurer  
Ordinary Management Committee Member (5 positions)  
Returning Officer  
Assistant Returning Officer

Nominations must be made in writing and must be signed by the nominee and three (3) financial voting members of AUUG Incorporated, and must state which position(s) are sought by the nominee. The nominee must be a financial ordinary member of AUUG Incorporated, and can nominate for any or all of the above positions. While any ordinary member may be nominated to more than one position, no person may be elected to more than one position. Election to positions is determined in the order shown above.

A sample nomination form can be found on the previous page.

Nominees may include with their nomination a policy statement of up to 200 words. This word count will not include sections of the statement stating, in point form, the name of the nominee and positions held on, or by appointment of, the AUUG Management Committee or positions in AUUG Chapters.

Policy statements that exceed the word limit shall be truncated at the word limit when included in the ballot information.

Nominations must be received by the Secretary of AUUG Incorporated by the 14th of April 1999, and may be lodged by one of the following methods:

- (1) by post to:  
The Secretary  
AUUG Incorporated  
PO Box 366  
Kensington, NSW, 2033

(the nomination must be received no later than April 16th and must be postmarked no later than 12 noon on April 14th 1999).

- (2) by hand to:  
The Secretary (Mark White) OR  
The AUUG Incorporated Secretariat  
no later than 5pm on April 14th 1999.
- (3) by FAX to:  
The Secretary (fax to (02) 9904 7057,

marked Attn: Mark White) OR  
The AUUG Incorporated Secretariat (fax to  
(02) 9332 4066)

no later than 5pm on April 14th 1999.

Mark White  
Secretary  
AUUG Incorporated

## AUUG Incorporated Election Procedures

---

These rules were approved by the AUUG Inc. Management Committee on 14/12/1994.

### 1. NOTICE OF ELECTION

The Returning Officer shall cause notice of election to be sent by post to all financial members no later than March 15 each year.

### 2. FORM OF NOTICE

The notice of election shall include:

- (a) a list of all positions to be elected, namely:
- President
  - Vice President
  - Secretary
  - Treasurer
  - Ordinary Committee Members (5)
  - Returning Officer
  - Assistant Returning Officer
- (b) a nomination form;
- (c) the date by which nominations must be received (in accordance with clause 21(2) of the Constitution, this date is 14 April);
- (d) the means by which the nomination form may be lodged;
- (e) a description of the format for a policy statement.

### 3. POLICY STATEMENT

A person nominated for election may include with the nomination a policy statement of up to 200 words. This word limit shall not include sections of the statement stating in point form the nominee's name, personal details and positions held on, or by appointment of, the AUUG Management Committee and chapters.

Policy statements exceeding the word limit shall be truncated at the word limit when included in the ballot information.

The Returning Officer may edit policy statements to improve readability, such edits being limited to spelling, punctuation and capitalisation corrections and spacing modifications.

Use of the UNIX wc program shall be accepted as an accurate way to count words.

#### 4. RECEIPT OF NOMINATIONS

In accordance with clause 21(2) of the Constitution, nominations shall be received by the Secretary up until April 14. A nomination shall be deemed to have been received by the due date if one of the following is satisfied:

- it is delivered by post to AUUG Inc's Post Box, the AUUG Secretariat's Post Box or the AUUG Secretariat's street address no later than 2 business days after April 14 and is postmarked no later than 12 midday on April 14;
- it is delivered by hand to the Secretary or the AUUG Inc Secretariat no later than 5 pm on April 14;
- it is transmitted by facsimile to the Secretary or the AUUG Inc Secretariat no later than 5 pm on April 14.

#### 5. REQUIREMENT FOR A BALLOT AND DUE DATE

In accordance with clause 21(5), no later than May 1, the Secretary

- shall advise the Returning Officer of all valid nominations received;
- and if a ballot is required, shall advise the Returning Officer of a date no later than May 15 for the ballot for all contested election.

In accordance with clause 42(3), the due date for return of ballots shall be 4 weeks after the date advised above.

#### 6. FORM OF BALLOT PAPER

The ballot paper shall contain:

- details of all positions for which the number of nominations exactly equals the number of positions to be filled;
- for each position for which a ballot is required, the names of all persons seeking election to that position, except those already elected to a higher position, with a square immediately to the left, for the elector to place a voting preference;
- instructions on how to complete the ballot paper;
- instructions on how to return the ballot paper;
- a brief description of how the ballot is to be counted.

The ballot paper shall not contain any identification of existing office-bearers.

The ballot paper shall be accompanied by a copy of all policy statements submitted by all persons

nominated, including any persons elected unopposed. These policy statements may be truncated or modified as outlined in 3.

#### 7. METHOD OF VOTING

Voting for each position shall be by optional preferential vote. The number "1" must be placed against the candidate of the elector's first preference, and a number other than "1" against any or all of the other candidates. Preferences shall be determined by the numbers placed against other candidates, which must be strictly monotone ascending to count as preferences.

A vote shall be informal if:

- it does not have the number "1" against exactly one candidate.

#### 8. SECRECY OF BALLOT

The ballot paper shall be accompanied by two envelopes, which may be used by the elector to ensure secrecy. On completion of the ballot paper, the paper may be placed inside the smaller envelope. This envelope is then placed inside a second envelope. The elector must then sign and date the outer envelope, making the following declaration:

"I, \_\_\_\_\_, member number \_\_\_\_\_, declare that I am entitled to vote in this election on behalf of the voting member whose membership number is shown above, and no previous ballot has been cast on behalf of this voting member in this election."

#### 9. RETURNING BALLOT

To be considered to have been returned by the due date, the ballot paper together with declaration as above must be returned by one of the following means:

- it is delivered by post to AUUG Inc's Post Box, the AUUG Secretariat's Post Box or the AUUG Secretariat's street address no later than 2 business days after the due date and is postmarked no later than 12 midday on the due date;
- it is delivered by hand to the Returning Officer or the AUUG Inc Secretariat no later than 5 pm on the due date.

#### 10. METHOD OF COUNTING

Where there is an election for a single position, the votes shall be counted by the preferential method. Where there is more than one position to be filled, the votes shall be counted by the modified preferential Hare Clark system described in Schedule 1.

#### 11. METHOD OF ELECTION

A person may be elected to only one position. Elections shall be counted in the order of positions



described in 2(a). When counting ballots, any person previously elected shall be deemed withdrawn from that election, and all ballot papers shall be implicitly renumbered as though that person was not included.

## 12. NOTIFICATION OF RESULT

In accordance with clause 42(7) of the Constitution, the Returning Officer shall advise the Secretary in writing of the result no later than fourteen days after the due date. The Returning Officer shall advise all candidates for election of the result no later than fourteen days after the due date. The Returning Officer shall advise the AUUGN Editor in writing of the result no later than fourteen days after the due date. The AUUGN Editor shall include the results in the first issue of AUUGN published after receiving the results from the Returning Officer.

## 13. PUBLICATION OF THESE RULES

The Returning Officer shall advise the AUUGN Editor of the current rules, and the AUUGN Editor shall cause the current rules to be published in the first issue of AUUGN published on or after 1 January each year. Where no issue of AUUGN has been posted by February 28 in any calendar year, the Returning Officer shall cause the current rules to be distributed with the notice of election.

## 14. OCCASIONAL VARIATION FROM THESE RULES

Subject to the Constitution, the Management Committee may authorise occasional variations from these rules. Such variations shall be advised in writing to all members at the next stage in the election process in which information is distributed to members.

## 15. EXECUTION

Where these rules require the Returning Officer to carry out an action, it shall be valid for the Returning Officer to delegate execution to the Secretariat from time to time employed by the Management Committee.

## 16. RETENTION OF BALLOT PAPERS

The Secretary shall retain that ballot papers and member declarations (as specified in 8) until the AUUG AGM of the calendar year following the year of the election, unless a general meeting of AUUG directs the Secretary to hold them for a longer period.

### Schedule 1

1. Each ballot paper shall initially have a value of one.
2. The value of each ballot paper shall be allotted to the candidate against whose name appears the lowest number on the paper among those candidates not elected or eliminated. If there is no such candidate (i.e. the ballot paper is exhausted) the ballot paper shall be set aside.

3. A quota shall be calculated by dividing the number of formal votes by one more than the number of positions remaining to be elected, and rounding up to the next whole number.

4. If any candidate is allotted a total value greater than the quota, that candidate shall be declared elected, and the ballot papers allotted to that candidate shall be assigned a new value by multiplying their previous value by the excess of the candidate's vote above the quota divided by the candidate's total vote. This new value shall be truncated (rounded down) to 5 decimal places. Ballot papers that subsequently have a value of zero shall be set aside. Steps 2 and 3 shall then be repeated.

5. If no candidate is allotted a total value greater than the quota, the candidate who is allotted the lowest total value among those candidates not elected or eliminated shall be eliminated. Steps 2 and 3 shall then be repeated.

6. Where

(a) two or more candidates declared elected at the same stage of counting according to Step 4 have an equality of votes, and it is necessary to determine which is deemed elected first,

or

(b) a candidate is required to be eliminated under Step 5, and two or more candidates have an equally low vote,

the Returning Officer shall return to the immediately preceding stage of counting and

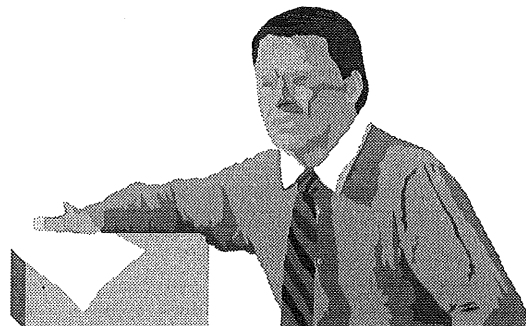
(i) in the case of candidates elected, deem first elected the candidate with the highest vote at the immediately preceding stage, and

(ii) in the case where a candidate is to be eliminated, eliminate the candidate with the lowest vote at the immediately preceding stage.

Where an equality of votes still exists at the immediately preceding stage, the Returning Officer shall continue proceeding to preceding stages until a result can be determined.

In the event that candidates have maintained an equality of votes throughout the entire counting process, the Returning Officer shall determine which candidate is to be determined first elected or to be eliminated by lot in the presence of the Assistant Returning Officer.

❖





# Unix Traps and Tricks

---

Sub-editor: Günther Feuerisen  
Gunther.Feuerisen@auug.org.au

Everything moves in cycles. When I first started contributing to AUUGN back in 1996, my first role was to edit the Traps and Tricks column. 3 years on, I'm back!

Admittedly, this is only a temporary sojourn for me. With Matt off in the UK, we didn't have time to find someone to take over the role.

So, if you are interested in editing the Traps and Tricks, drop me a note.

On with the show!

★ ★ ★

## LOGWHACKER

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Information Technology Services  
University of Wollongong

### *Introduction*

Log files, whether produced by syslog or other mechanisms, can be a problem. Very few of the applications which produce log files include mechanisms for controlling the size of the files they produce and the end result is often lost log messages and full filesystems. Logwhacker is a fairly simple Korn shell (ksh) script, which allows an administrator to define log file characteristics in a configuration file. The script will support most of the actions commonly applied to log files, such as trimming to a specified length or rotating.

### *Supported Actions*

Logwhacker is designed to be run nightly after midnight. The actions it supports are:

#### Trim

The log file is assumed to be a text file. If it is larger than the specified size in Kilobytes, the file is trimmed down to the desired size by removing characters at the beginning of the file. The trimmed information is lost.

#### Daily Rotation

The log file is rotated on a daily basis. The current file is renamed by appending the abbreviated name for yesterday and then compressed. A new empty file is created.

#### Monthly Rotation

Similar to the daily style, but done on a monthly basis.

#### General Rotate

The log file FNAME is renamed to FNAME.1 after FNAME.1 if it exists is renamed FNAME.2 and so on. The number of rotations to keep is defined in the configuration file.

The configuration file allows for the owner group and permissions of the log files to be specified. Shell metacharacters are supported. The configuration file is first preprocessed by M4 before being read which allows differing actions to be performed based on machine name.

One other useful feature is that the configuration file can also contain commands to be executed. One obvious use for this is to allow syslog to be stopped before actions are performed on log files, then restarted after the log files have been processed. Commands have access to the names of files generated internally to the script after each configuration file line is processed via predefined shell variable names.

### *Required Utilities*

Logwhacker is written in standard ksh. The only non standard utility it requires is the stat(1) program written by Chip Rosenthal which it uses to find the size and timestamp information for files. See *Availability* for more information.

## Availability

Logwhacker is available at:  
<http://draci.uow.edu.au/logwhacker/>

The stat utility is available at:  
<http://draci.uow.edu.au/stat/>

\* \* \*

## STRIP\_OUT\_TYPES

Andrew Weston  
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My company has contracted me out to a software section in another company. This environment contains a lot of headers files spread over a large number of directories. The typedefs in the files can be quite involved and often call other types from who-knows-where (you need to trace a number of #includes).

Anyway for my own sanity I wrote this script. Simply put it parses the header (or C source) files and lists the file name, the line number where the typedef was found and the name of the typedef. I called this script inside a find command (piped to sort so that the types were in alphabetical order) to create a list of all typedefs in the heirarchy and created an alias which searches the generated file for the typedef entry.

This has saved us hours in trying to located and relocate which file contains "that typedef" which is why I thought others might be interested.

I decided to ignore the function typedefs as they were not required.

The code is not the most elegant, but I hope sufficiently readable. I am sure that others could rewrite this better, however I just wanted something that works.

### USAGE:

```
strip_out_types <filename>
```

### Useful usage:

```
cd <top dir>  
find . \( -name \*.h -o -name \*.c \) -exec strip_out_types {} \; > <output_file>
```

```
#!/bin/sh  
# This script will attempt to read a header file and strip out the  
# typedefs names from the file and then print them, one to a line  
# along with the filename. Function types are ignored.  
  
FILE_NAME=$1  
awk 'BEGIN{  
    true = 1;  
    false = 0;  
    in_typedef = false;  
    print_typedef = false;  
    typedef_line = 0;  
    num_brackets = 0;  
    has_bracket_body = false;  
    current = "";  
    last_word = "";  
    second_last = "";  
}  
{  
    # If we have not started to parse a typedef then  
    if (NF > 0)  
    {  
        # step through each word.  
        for (word_ctr = 1; word_ctr <= NF; word_ctr++)  
        {  
            current = $word_ctr;  
  
            # Check if we are in the typedef sequence. If not then  
            # the only check we want to do is to see if we are starting the  
            # typedef sequence.  
            # on the line.  
            if (in_typedef == false)
```

```

{
  if (current == "typedef" )
  {
    in_typedef = true;
    typedef_line = NR;
    num_brackets = 0;
    has_bracket_body = false;
    second_last = "";
    last_word = "";
  } # END if the current word is typedef
} # END if not in typedef

if (in_typedef == true)
{
  # Find the length of the word, and the first and
  # last character of the word incase a token: ({};) are
  # pre-pended or appended to the word.
  current_len=length(current);
  curr_last_char=substr(current,current_len,1);
  curr_first_char=substr(current,1,1);

  if (num_brackets == 0)
  {
    # we are now outside brackets either at the start or
    # end.
    # Add functionality for where semicolon is appended to the
    # word.
    if (( current == ";" ) || (curr_last_char == ";"))
    {
      print_typedef = true;
    }
    else
    {
      # Check if the "{" token is part of the word and if so
      # switch on this.

      # If current = { then curr_last_char will also be {
      if ((curr_first_char == "{" ) || (curr_last_char == "{"))
      {
        has_bracket_body = true;
        num_brackets++;
        # we have a typedef body so discard any stored tokens.
        second_last = "";
        last_word = "";
      }
      else      # (current does not contain an opening bracket)
      {
        # shift down the words in the buffer
        if ( current != ")" )
        {
          # Block any function typedefs: word starts with ( or
          # end with ).
          if ((curr_first_char != "(") &&
              (curr_last_char != ")"))
          {
            if ( has_bracket_body == true)
            { second_last = last_word; }
            last_word = current;
          }
        }
      }
    }
  } # END: if current is or is appended by ;
}
else      # (num_brackets != 0)
{
  # If current = { then curr_last_char will also be {
  if ((curr_first_char == "{" ) || (curr_last_char == "{"))
  {
    has_bracket_body = true;
    num_brackets++;
  }
}

```

```

else
{
# If current = } then curr_last_char will also be }
if ((curr_first_char == "}") || (curr_last_char == "}")
{ num_brackets--; }

if ((num_brackets == 0) && (has_bracket_body == true))
{ # we need to set the last_word as the rest of this.
  if (current_len > 1)
  {
    if (curr_last_char == ";")
    { print_typedef = true; }
    else
    {
      if (curr_first_char == "}")
      { last_word = substr(current,2,(current_len - 1)); }
    } # END: if last char = ;
  }
}
} # END if number of brackets is 0
} # END: if in_typedef

if (print_typedef == true)
{
  if (current != ";")
  {
    curr_last_char=substr(current,(current_len - 1),1);
    if ((curr_first_char == "(") || (curr_last_char == ")"))
    {
      last_word = "";
      second_last = "";
    }
    else
    {
      if (curr_first_char == "}")
      {
        if (last_word != "")
        { second_last = last_word; }
        last_word = substr(current,2,(current_len - 2));
      }
      else
      {
        if (last_word != "")
        { second_last = last_word; }
        last_word = substr(current,1,(current_len - 1));
      }
    }
  } # END: if it starts or ends with a bracket

# We are now ready to print out the typedef.
if ((second_last != "") && (has_bracket_body == true))
{ printf("%s:%s:%s\n",FILENAME,typedef_line,second_last); }
if (last_word != second_last)
{ printf("%s:%s:%s\n",FILENAME,typedef_line,last_word); }

second_last="";
last_word="";
num_brackets = 0;
has_bracket_body = false;
in_typedef = false;
print_typedef = false;
} # END if print_typedef is true
} # END for loop
} # END if NF greater than 0
}' $FILE_NAME

```

\* \* \*

## HTOL2SS

Lawrie Brown  
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[ *Editor's Note: this article comes from Lawrie's own website. For a complete listing of all the files referenced in the article, please visit: <http://www.adfa.edu.au/~lpb/src/htol2ss/> ]*

htol2ss (HTml OutLine to Slide-Show) is a Perl script for converting presentation (lecture/seminar etc) outlines written as nested HTML lists, into a form appropriate for direct presentation using a (Netscape) browser.

I wrote this script as part of an ongoing process to find an effective, simple means for authoring presentations so that I maintained one master copy, but could produce derivatives optimised for different views (eg. printed notes, web notes, in class presentation), whilst minimising the workload needed to do this.

Previously, I've mastered overheads using MS Word, and printed them 4 up for handouts, and used a customised `rtftohtml` to create web notes. I have mastered online presentations using MS Powerpoint, and printed them 6 up for handouts, and used a highly customised `rtftohtml` to create web notes from the outline saved as RTF. Whilst both approaches worked, I've not been totally happy with them. Hence this script.

This time I'm focusing on mastering the notes, concentrating on the content and structure rather than on the look. These notes can be written using any HTML or text editor. Each slide corresponds to a single point in the first level list. Under it can be further list levels, pre-formatted text, inline images, tables or whatever is desired. This file is then converted into a 2nd HTML file using the `htol2ss` script. It makes each first level list item into a slide header, with back and forward navigation arrows and a ruler over a suitable background image.

The over-riding principle was KISS - the notes master uses very basic HTML, which should be supported anywhere, with no attempt to control the final look on all platforms. The slide-show code produced, whilst it does use Netscape HTML extensions, can be displayed on just about any version of Netscape.

For example, given a presentation such as the skeletal `oline.html`, the slide-show file can be created by the command:

```
htol2ss oline.html
```

which creates the file `ss-oline.html`.

`htol2ss` has a large number of command-line options which can be used to customise the look of the slide-show. These are summarised in the usage message displayed when you call `htol2ss -h` and detailed below. However as an example, another slide-show could be created from the same `oline.html` master, with a crimson background, yellow headers, green text, no ruler and the prefix "x" (ie output file is `xoline.html`) using:

```
htol2ss -b '#993333' -c '#ffff00' -p 'x' -R -t '#00ff00' oline.html
```

As a slightly larger example, have a look at the original `htpres.html` talk (excepted from the CS ADFA seminar on 26 Nov 98), and its slide-show form `ss-htpres.html`.

### Using `htol2ss`

`htol2ss` processes one or more HTML files named on its command-line, and creates the slide-show form of each in a file with "ss-" prefixed onto the original name, provided the original file is newer than the slide-show (if it exists).

By default, it is assumed that a subdirectory `img/` exists which holds the four inline images used by the script, being:

- `img/back.gif`  
the back arrow used to navigate to the previous slide
- `img/fwd.gif`  
the forward arrow used to navigate to the next slide
- `img/bg.jpg`  
the background image used for the slides
- `img/hr.gif`  
the ruler image used below the title for each slide

The background, ruler, and image directory names can be over-ridden using the command-line arguments.

Each slide has a named anchor of the form "sXX" where XX is the slide number. An initial arrow is placed just after the body tag to navigate to the first slide. You may find it useful to create an index of presentations, with the anchors naming "ss-XXX.html#s1" to jump straight to the first slide (eg. by hacking the output of `htls -ht ss-*` for example).

In more detail, `htol2ss` can be called with the following command-line arguments:

```
htol2ss [-b val] [-c val] [-f] [-h] [-i dir] [-p pref] [-q]
        [-r fil|-R] [-s siz] [-t val] file1.html [file2.html ...]
```

described in more detail below (and with the assumed defaults in brackets):

```
-b file
  name of background image file for BODY tag (bg.jpg)
-b #rrggbb
  OR the background color specified in BODY tag
-c #rrggbb
  text color used for H2 slide headings (default)
-f
  force update even if original is older
-h
  prints this usage message
-i dir
  name of directory the images are in (img/)
-p prefix
  prefix added to form output slide-show file names (ss-)
-q
  quiet mode, no status messages
-r file
  name of ruler image used below slide headings (hr.gif)
-R
  DONT use ruler image
-s fontsize
  base font size (1..7) to use for slide-show text (6)
-t #rrggbb
  text color specified in BODY tag (default)
file1.html [file2.html ...]
  list of files to convert
```

Note: colours are specified as 3 hex values for RGB (eg bright red is #ff0000) as per the usual HTML conventions.

#### *Assumed Structure of Input File*

The input file is assumed to be a nested OL or UL list, and must have the body tags. ie. it should look like the skeletal `oline.html`, vis:

```
<html><head>
<title>Presentation Outline</title>
</head><body>
<h1>Presentation Outline</h1>
<ol>
<li> Slide 1
<ul>
<li> point 1
<li> point 2
<li> point 3 etc
</ul>

<li> Slide 2
<ul>
<li> point 1
<li> point 2
<li> point 3 etc
<pre>
some preformatted text etc
</pre>
```



```
</ul>
...
</ol>
<hr>
</body></html>
```

This type of file can be easily created and changed using any HTML or text editor (even vi with a bunch of macros for common HTML tags like I use :-)

### *Installation*

To install htol2ss you just need to copy the script (follow any hotlink to it in this file or go to <http://www.adfa.edu.au/~lpb/src/htol2ss/>) to either your working directory, or to a directory in your search path, and have Perl installed. DOS/Mac users will also need the getopts.pl standard perl library module if the standard library has not been installed.

DOS users will probably also need to invoke the script explicitly using perl, vis: perl htol2ss ...

You'll also need to get appropriate images for the arrows, ruler and background. You can steal the ones I use from the `img/` directory here. If you find any nicer ones, I'd love to know about them.

### *Under the Hood*

The perl script is a single file (with one dependency on `getopts.pl`), written in common perl 4/5 (and runs happily using either version). After processing the command-line arguments it then loops over each input file in turn. For each, it checks to see if the slide-show needs to be updated, slurps in the entire file, splits it up at the start of each HTML tag, and then loops to examine each tag in turn to see if any additions or rewrites are required before writing that piece of text to the slide-show file. I think it demonstrates how elegantly perl can handle this type of problem.

### *Wrapup*

I'll be trialing the use of this approach with one of my courses in 1999. I would welcome any further comments or feedback others may have on this script and its uses.

\* \* \*

## **TOOLS FOR Y2K TESTING**

Graham Jenkins  
graham.k.jenkins@corpmail.telstra.com.au

Y2K testing procedures in many work places involve changing the date of a test machine, then copying production files to it, and running applications against those files. The first of the programs below can make the copying process a lot easier for you. It relies on some of the concepts presented in this column previously.

Changing the date on a test machine can wreak havoc with things like backup programs - where there is a need to determine the real current date. The second of the programs below can be of assistance in that regard. Note that it uses a program called 'tcpclient' to establish a TCP connection to the 'daytime' port on one or more NTP servers; the source code for that program appears as a third listing hereunder.

Those readers with 'perl' experience may wish to combine the second and third programs into a single 'perl' program have a smaller number of lines than either.

```
#!/bin/ksh
# @(#) rcpdir Remote copy directories.
#           Graham Jenkins, IBM Global Services Australia, January 1999.

[ $# -lt 2 ] &&
  echo "Usage: `basename $0` host directory1 [directory2] .." && exit 2

badexit() {
  Status=$1 ; shift ; echo "$@ .. aborting!"
  exit $Status
}

Host=$1 ; shift ; StartDir=`pwd`
for Dir in $* ; do
```

```

cd $Dir 2>/dev/null || .
    badexit 1 "Directory: $Dir not found"
rsh $Host "cat /dev/null" 2>/dev/null ||
    badexit 1 "Access denied on host: $Host"
rsh $Host "cd $Dir && echo OK" 2>/dev/null | grep OK >/dev/null 2>&1 ||
    badexit 1 "Cannot change directory to: $Dir on host: $Host"
echo "Copying: $Dir to host: $Host"
find . -mount -depth -print | cpio -oac -C 32768 2>/dev/null | compress |
    rsh $Host "cd $Dir; zcat | cpio -icdum -C 32768 2>/dev/null" &
cd $StartDir
done

echo "Awaiting completion .."
wait
exit 0

#!/bin/ksh
# @(#)realdate      Returns 'real' date as found on NTP server(s).
#                  If called with parameter '-s', returns date in form
#                  'yyyymmdd'.
#                  Graham Jenkins, IBM GSA, January 1999.

# Access NTP servers in sequence until one returns a date
[ -r /etc/ntp.conf ] && Conf=/etc/ntp.conf || Conf=/etc/inet/ntp.conf
for RDServer in `awk '{if($1=="server")print $2}' < $Conf` ; do
    Dateline=`/usr/local/bin/tcpclient $RDServer 13`
    if [ -n "$Dateline" ] ; then
        if [ "$1" = "-s" ] ; then      # For '-s' map month-name to month-no, then
            echo $Dateline | awk '{    # fill and print year, month-no and day
fields
                for(j=1;j<=12;j++) {
                    if( substr("JanFebMarAprMayJunJulAugSepOctNovDec",j*3-2,3) == $2 )
{
                        printf "%04d%02d%02d\n", $NF, j, $3 ; exit
                    }
                }
            }'
        else
            echo "$Dateline"          # If not '-s' print entire date line
        fi
    fi
    exit 0
fi
done
exit 1

/* $Header: tcpclient.c 1.02 Graham Jenkins, IBM GSA. 1998-07-29 $ */

/*
 * This program creates a socket and initiates a tcp connection with the
socket
 * given in the command line. Characters received through the connection
are
 * passed to standard output. The form of the command line is:
 *          tcpclient <hostname> <portno>
 *          eg:  tcpclient ntpserver1 13
 * Compile with:
 *          cc -O tcpclient.c -lsocket -lnsl
 */

#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <netdb.h>
#include <stdio.h>

main(argc, argv)
    int argc;
    char *argv[];
{

```

```

int fd;
struct sockaddr_in server;
struct hostent *hp, *gethostbyname();
char ch[2];

if (argc != 3) {
    fprintf(stderr, "Usage: %s server portno\n", argv[0]);
    exit(1);
}

/* Create socket */
fd = socket(AF_INET, SOCK_STREAM, 0);
if (fd < 0) {
    perror("opening stream socket");
    exit(1);
}

/* Connect socket using number specified by command line */
server.sin_family = AF_INET;
hp = gethostbyname(argv[1]);
if (hp == 0) {
    fprintf(stderr, "%s: unknown host\n", argv[1]);
    close(fd);
    exit(1);
}
memcpy(&server.sin_addr, hp->h_addr, hp->h_length);
server.sin_port = htons(atoi(argv[2]));
if (connect(fd, &server, sizeof(server)) < 0) {
    perror("connecting stream socket");
    close(fd);
    exit(1);
}

/* Read from the socket */
while (read(fd, ch, 1) > 0) putchar(ch[0]);
close(fd);
exit(0);
}

```

Alternatively, here's the Perl program which can replace the second and third programs above.

```

#!/usr/local/bin/perl -w
# realdate.pl Returns 'real' date as found on NTP server(s).
# If called with parameter '-s', returns date in form
# 'yyyymmdd'
# Graham Jenkins, IBM GSA, January 1999.
require 5.002;
use strict;
use Socket;
my ($conf, $type, $remote, $port, $iaddr, $paddr, $proto, $flag,
    @field, %month ) ;

foreach $conf ('/etc/ntp.conf', '/etc/inet/ntp.conf') {
    open(CONF, $conf) or next;
    while (<CONF>) {
        chop;
        ($type, $remote) = split or $type='x' ;
        if ( $type eq "server" ) {
            $iaddr = inet_aton($remote);
            $paddr = sockaddr_in(13, $iaddr);
            $proto = getprotobyname('tcp');
            socket(SOCK, PF_INET, SOCK_STREAM, $proto) or next;
            connect(SOCK, $paddr) or next;
            $flag = shift || "x";
            if ( $flag eq "-s" ) {
                %month = ( "Jan", 1, "Feb", 2, "Mar", 3, "Apr", 4, "May", 5, "Jun", 6,
                    "Jul", 7, "Aug", 8, "Sep", 9, "Oct", 10, "Nov", 11, "Dec", 12 );
                while (<SOCK>) {
                    chop;
                    @field = split;

```

```

printf "%04d%02d%02d\n", $field[$#field], $month{$field[1]}, $field[2];
exit;
}
}
else { print $_ while defined($_ = <SOCK>); exit; }
}
}
}
❖

```

## AUUG Local Chapter Meetings 1999

CITY	LOCATION	OTHER
<b>BRISBANE</b>	Inn on the Park 507 Coronation Drive Toowong	For further information, contact the QAUUG Executive Committee via email (qauug-exec@auug.org.au). The techno-logically deprived can contact Rick Stevenson on (07) 5578-8933.  To subscribe to the QAUUG announcements mailing list, please send an e-mail message to: <majordomo@auug.org.au> containing the message "subscribe qauug <e-mail address>" in the e-mail body.
<b>CANBERRA</b>	Australian National University	
<b>HOBART</b>	University of Tasmania	
<b>MELBOURNE</b>	Various. For updated information See:  <a href="http://www.vic.auug.org.au/auug/vic/av_meetings.html">http://www.vic.auug.org.au/auug/vic/av_meetings.html</a>	The meetings alternate between Technical presentations in the odd numbered months and purely social occasions in the even numbered months. Some attempt is made to fit other AUUG activities into the schedule with minimum disruption.
<b>PERTH</b>	The Victoria League 276 Onslow Road Shenton Park	Meeting commences at 6.15pm
<b>SYDNEY</b>	The Wesley Centre Pitt Street Sydney 2000	

**Up-to-date information is available by calling AUUG on 1-800-625-655.**

# Application for Institutional Membership

## Section A: MEMBER DETAILS

The primary contact holds the full member voting rights and two designated representatives will be given membership rates to AUUG activities including chapter activities. In addition to the primary and two representatives, additional representatives can be included at a rate of \$70 each. Please attach a separate sheet with details of all representatives to be included with your membership.

NAME OF ORGANISATION: \_\_\_\_\_

### Primary Contact

Surname \_\_\_\_\_ First Name \_\_\_\_\_  
 Title: \_\_\_\_\_ Position \_\_\_\_\_  
 Address \_\_\_\_\_  
 Suburb \_\_\_\_\_ State \_\_\_\_\_ Postcode \_\_\_\_\_  
 Telephone: Business \_\_\_\_\_ Facsimile \_\_\_\_\_  
 Email \_\_\_\_\_ Local Chapter Preference \_\_\_\_\_

## Section B: MEMBERSHIP INFORMATION

Renewal/New Institutional Membership of AUUG  \$350.00  
 Surcharge for International Air Mail  \$120.00  
 Additional Representatives Number  @ \$80.00

Rates valid as at 07/96

## Section C: PAYMENT

Cheques to be made payable to AUUG Inc (Payment in Australian Dollars only)

*For all overseas applications, a bank draft drawn on an Australian bank is required.  
Please do not send purchase orders.*

-OR-

Please debit my credit card for AS\$ \_\_\_\_\_  
 Bankcard  Visa  Mastercard

Name on Card \_\_\_\_\_  
 Card Number \_\_\_\_\_  
 Expiry Date \_\_\_\_\_  
 Signature \_\_\_\_\_

Please mail completed form with payment to: \_\_\_\_\_ Or Fax to: \_\_\_\_\_

Reply Paid 66 AUUG Inc  
 AUUG Membership Secretary (02) 9332-4066  
 PO Box 366  
 KENSINGTON NSW 2033

## Section D: MAILING LISTS

AUUG mailing lists are sometimes made available to vendors. Please indicate whether you wish your name to be included on these lists:

Yes  No

## Section E: AGREEMENT

*I/We agree that this membership will be subject to rules and by-laws of AUUG as in force from time to time, and that this membership will run from time of joining/renewal until the end of the calendar or financial year.*

*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.*

Signed: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

### AUUG Secretariat Use

Chq: bank \_\_\_\_\_ bsb \_\_\_\_\_

A/C: \_\_\_\_\_ # \_\_\_\_\_

Date: \_\_\_\_\_ \$ \_\_\_\_\_

Initial: \_\_\_\_\_ Date Processed: \_\_\_\_\_

Membership#: \_\_\_\_\_



UNIX® AND OPEN SYSTEMS USERS

Membership  
Application

### AUUG Inc Secretariat

PO Box 366, Kensington NSW 2033, Australia

Tel: (02) 9361 5994

Free Call: 1 800 625 655

Fax: (02) 9332 4066

email: auug@auug.org.au

ACN A00 166 36N (incorporated in Victoria)

http://www.auug.org.au

AUUG Inc is the Australian UNIX and Open Systems User Group, providing users with relevant and practical information, services and education through co-operation among users.

**AUUG OFFERS SOMETHING FOR YOU!!**

**Education**  
Tutorials  
Workshops

**AUUGN**  
*Technical Newsletter*  
AUUG's bi-monthly publication, keeping you up to date with the world of UNIX and open systems.

**Events....Events.....Events**  
• Annual Conference & Exhibition  
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**DISCOUNTS**  
to all AUUG events and education.  
Reciprocal arrangements with overseas affiliates.  
Discounts with various internet service providers, software, publications and more...!!

**Connections**  
• Newsgroup  
aus.org.auug

# Application for Individual or Student Membership

## Section A: PERSONAL DETAILS

Surname \_\_\_\_\_ First Name \_\_\_\_\_  
 Title: \_\_\_\_\_ Position \_\_\_\_\_  
 Organisation \_\_\_\_\_  
 Address \_\_\_\_\_  
 Suburb \_\_\_\_\_ State \_\_\_\_\_ Postcode \_\_\_\_\_  
 Telephone: Business \_\_\_\_\_ Private \_\_\_\_\_  
 Facsimile: \_\_\_\_\_ E-mail \_\_\_\_\_

## Section B: MEMBERSHIP INFORMATION

Please indicate whether you require Student or Individual Membership by ticking the appropriate box.

### RENEWAL/NEW INDIVIDUAL MEMBERSHIP

Renewal/New Membership of AUUG  \$100.00

### RENEWAL/NEW STUDENT MEMBERSHIP

Renewal/New Membership of AUUG  \$25.00  
 (Please complete Section C)

SURCHARGE FOR INTERNATIONAL AIR MAIL  \$60.00

Rates valid as at 07/96

## Section C: STUDENT MEMBER CERTIFICATION

For those applying for Student Membership, this section is required to be completed by a member of the academic staff.

I hereby certify that the applicant on this form is a full time student and that the following details are correct.

NAME OF STUDENT: \_\_\_\_\_

INSTITUTION: \_\_\_\_\_

STUDENT NUMBER: \_\_\_\_\_

SIGNED: \_\_\_\_\_

NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

## Section D: LOCAL CHAPTER PREFERENCE

By default your closest local chapter will receive a percentage of your membership fee in support of local activities. Should you choose to elect another chapter to be the recipient please specify here:

\_\_\_\_\_

## Section E: MAILING LISTS

AUUG mailing lists are sometimes made available to vendors. Please indicate whether you wish your name to be included on these lists:

Yes  No

## Section F: PAYMENT

Cheques to be made payable to AUUG Inc  
 (Payment in Australian Dollars only)

For all overseas applications, a bank draft drawn on an Australian bank is required. Please do not send purchase orders.

-OR-

Please debit my credit card for A\$ \_\_\_\_\_

Bankcard  Visa  Mastercard

Name on Card \_\_\_\_\_

Card Number \_\_\_\_\_

Expiry Date \_\_\_\_\_

Signature \_\_\_\_\_

Please mail completed form with payment to: Or Fax to:

Reply Paid 66  
 AUUG Membership Secretary  
 PO Box 366  
 KENSINGTON NSW 2033  
 AUSTRALIA

AUUG Inc  
 (02) 9332-4066

## Section G: AGREEMENT

I agree that this membership will be subject to rules and by-laws of AUUG as in force from time to time, and that this membership will run from time of joining/renewal until the end of the calendar or financial year.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

## AUUG Secretariat Use

Chq: bank \_\_\_\_\_ bsb \_\_\_\_\_

A/C: \_\_\_\_\_ # \_\_\_\_\_

Date: \_\_\_\_\_ \$ \_\_\_\_\_

Initial: \_\_\_\_\_ Date Processed: \_\_\_\_\_

Membership#: \_\_\_\_\_