The Conference for
Unix, Linux and Open Source
professionals

AUUG 2005

Tutorials: 16-18 October
Conference: 19-21 October

AUUG

WELCOME MESSAGE

FROM THE AUUG PRESIDENT

There are constant advances being made in the way we store, manipulate and present information.

However, these advances typically mean that applications are not single systems, but a variety of systems working in concert. So your web browser talks to your web server talks to your application server talks to your content management system talks to your database, with support from directory systems, network management systems, backup systems and the like.

As computing professionals we are faced with the challenge of conducting the concert - making all these disparate systems work in harmony.

At the AUUG 2005 conference we will be discussing many practical solutions to these problems - from open network protocols and file formats, to day to management problems such as email spam filtering. I call upon all IT professionals to get involved in the conference, to contribute a paper or tutorial, or even just come along and contribute your collected wisdom.

See you in October!

David Purdue
AUUG President

FROM THE PROGRAMME CHIAR

I It is my great pleasure to be once again in the hot seat, putting together the programme for AUUG's annual conference. An AUUG conference is a special event - our broad base enables us to bring you an eclectic mix of speakers under a banner that might be summarised as "cool people doing cool stuff".

This year's programme covers a broad range of topics, from operating system development, through networking, system administration and security, databases and web development, and stopping off for a beer after recording a rock band! We love our technology, but we're not lost in it, so you'll also find business-focussed presentations as well as discussion of privacy and rights issues.

We don't focus on open source, or Linux, or even Unix (although that's often how it turns out). Rather we look for innovative approaches to real world problems in computing. I guarantee that you'll find something to challenge you, regardless of your computing focus.

Adrian Close
Programme Chair

GENERAL INFORMATION

VENUE
Carlton Crest Hotel, 169-179 Thomas Street, Sydney NSW 2000

REGISTRATION FEES
See the registration form at the end of the brochure for full details.

TUTORIAL REGISTRATION FEE
The Tutorial fee allows you to attend pre-selected tutorial sessions, receive your session notes, tea breaks and lunch for those attending the full day tutorials or two half day tutorials on the same day.

CONFERENCE REGISTRATION FEE
The full registration fee covers attendance at all sessions, the Networking Reception, tea breaks, lunch on each day of the Conference, the Conference Dinner, the conference folder containing the conference final programme, delegate listing and a copy of the printed proceedings.

SINGLE DAY
CONFERENCE REGISTRATION FEE
The day registration fee covers attendance at all sessions for the day nominated, tea breaks, lunch on the day of the Conference attendance, the conference folder containing the conference final programme, delegate listing and a copy of the printed proceedings. It does not include the evening social functions.

STUDENT REGISTRATION FEE
The Student registration fee covers attendance at all sessions for the day(s) nominated, the conference folder containing the conference final programme, delegate listing and a copy of the printed proceedings. It does not include morning and afternoon tea, lunch, or the evening social functions.

CANCELLATION POLICY
Cancellations received in writing after 30 September 2005 will forfeit 50% of registration fees. No refunds will be allowed after 7 October 2005, but substitutions will be accepted up to the beginning of the conference.

ACCOMMODATION
A conference rate has been negotiated with the Carlton Crest, Sydney:

$160 per night   – King or Twin Room
$178.50 per night   – King Room + 1 Buffet Breakfast
$197.00 per night   – King or Twin Room + 2 Buffet Breakfasts

Bookings are to be made directly with the Carlton Crest, ph: (02) 9281-6888 - please quote that you are attending "AUUG 2005 Conference" and require this rate.

Alternate accommodatiob can be found at the Mercure for $169 per night (02 9217 6666), or the Country Comfort for $146 per night (02 9212 2544)

All rates are based on a per room per night basis and delegates are responsible for settling their own accounts on departure, directly with the Carlton Crest. Please note: Any amendments or cancellations to hotel bookings must be made directly with the Carlton Crest.

When booking, please mention that you are with the AUUG block booking.

CAR PARKING
The Carlton Crest Carpark, adjacent to the Hotel, provides undercover parking for 600 cars. Parking is available for all conference delegates for $10.00 per day. Delegates must have parking tickets validated by Carlton Crest Front Office Receptionists.

TRANSPORT
The Carlton Crest Hotel is a 2-minute walk from Central Station, and the Haymarket Light Rail and Monorail stations.

CONFERENCE REGISTRATION
The Registration Desk will be located in the Pre-Function Area, 1st Floor, Carlton Crest Hotel.

Onsite Registrations will be handled at the following times:

Sun 16 Oct 8:00am –10:00am,
             12:00pm –1.30pm
             (for Tutorials)
Mon 17 Oct 8:00am –10:00am,
             12:00pm –1.30pm
             (for Tutorials)
Tues 18 Oct 8:00am –10:00am,
             12:00pm –1.30pm
             (for Tutorials & Conf)
Wed 19 Oct 8:00am –10:00am
             (for Conference)
Thurs 20 Oct 8:30am –9.30am
             (for Conference)
Fri   21 Oct 8:30am –9.30am
             (for Conference)

CONFERENCE ENQUIRIES
Please direct all Conference enquiries to:
AUUG Inc, PO Box 7071, Baulkham Hills BC NSW 2153, Australia
Phone: +61 2 8824 9511 or 1-800-625 655
Fax: +61 2 8824 9522
Email: auug2005@auug.org.au

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KEYNOTE AND INVITED SPEAKERS

Bryan Cantrill

Bryan is a senior engineer in the Solaris Kernel Development group at Sun Microsystems, and has a keen interest in performance engineering. He is one of the primary architects of the Dtrace dynamic tracing framework that is part of Solaris 10 and OpenSolaris.

Reyk Floeter

Reyk is a co-founder of .vantronix | secure systems, a consulting company specialised in Open Source security in Hannover, Germany. He is the chairman of the EICAR Task Force on Wireless LAN Security and works as an OpenBSD hacker on improving the free wireless support,

Peter Gutmann

Peter Gutmann is a researcher in the Department of Computer Science at the University of Auckland working on design and analysis of cryptographic security architectures. He helped write the popular PGP encryption package, has authored a number of papers and RFC's on security and encryption including the X.509 Style Guide for certificates, and is the author of the open source cryptlib security toolkit. In his spare time he pokes holes in whatever security systems and mechanisms catch his attention and grumbles about PKIs.

Arjen Lentz

Arjen is originally from Amsterdam, The Netherlands. Since marrying an Aussie, he decided that Australia is a very nice place to live, so together with their black cat they now reside in Kenmore, a Western suburb of Brisbane, QLD. Arjen started with programming, but has since branched out to writing, translating, marketing, training and consultancy. He has been working for MySQL AB (the Swedish company that owns, develops and supports the MySQL database software, www.mysql.com) since 2001, primarily as technical writer for MySQL Documentation Team.

Brad Templeton

Brad Templeton founded and ran ClariNet Communications Corp., the first internet-based content company, then sold it to Newsedge Corporation in 1997. ClariNet publishes an online electronic newspaper delivered for live reading on subscriber's machines. He has been active in the computer network community since 1979, participated in the building and growth of USENET from its earliest days and in 1987 he founded and edited rec.humor.funny, the world's most widely read computerized conference on that network. He has been a software company founder, and is the author of a dozen packaged microcomputer software products. He is chairman of the board of the Electronic Frontier Foundation, the leading civil rights advocacy group for cyberspace. He also sits on the advisory boards for a few Internet start-ups. Currently he is building a new start-up to reinvent the phone call. He is also on the board of the Foresight Institute (a Nanotech think-tank.)

Mark Uemura

Mark Uemura is an IT Manager for PricewaterhouseCoopers (PwC) in Japan. He is also the Deputy Chairperson for the PwC Asia Pacific Information Security Forum. His role is in leading, advising and spear-heading the group on technical security implementations and solutions for all of Asia Pacific Countries and Territories.

TUTORIAL PROGRAMME

Full Day Tutorials   **9am – 5pm**

S1 - Debugging Kernel Problems, *Greg Lehey*

Intended Audience:
Kernel developers and experienced system administrators. The tutorial assumes a good working knowledge of UNIX systems administration and the C programming language. A knowledge of kernel internals will be helpful, but is not essential. Depending on prior experience, participants will learn to locate and either fix or report kernel bugs.

Description:
This tutorial will show debugging techniques on live systems. The operating system for most of the tutorial will be FreeBSD, but it will explain the (relatively small) differences in NetBSD and OpenBSD. Much of the content, including some of the kernel debugging examples, applies to Linux as well.

Topics:
- How and why kernels fail.
- Understanding log files: dmesg, /var/log/messages.
- Using common tools for debugging a running system: ps, netstat, top.
- Building a kernel with debugging support: the options.
- Preparing for dumps: dumpon, savecore.
- Demonstration: panicing and dumping a system.
- Preliminary dump analysis (non-technical, without sources).
- The assembler-level view of a C program.
- Introduction to the kernel source tree.
- Analysing panic dumps with gdb (technical).
- On-line kernel debuggers: ddb, remote serial gdb.
- Debugging a running system with gdb.
- If time permits, a demonstration of some of these topics on NetBSD and OpenBSD systems.

Greg Lehey
Greg Lehey has been in the computer industry for 30 years, in which time he has performed most jobs, ranging from kernel development to product management, from systems programming to systems administration, from processing satellite data to programming petrol pumps, from the production of CD-ROMs of ported free software to DSP instruction set design. He is the author of "Porting UNIX Software" (O'Reilly and Associates, 1995) and "The Complete FreeBSD" (O'Reilly and Associates, 2003).

Half Day Tutorials – Afternoon   **1.30pm – 5pm**

S2 - Introduction to Network Simulator 2 (ns2), *Joel Sing*

This tutorial will provide attendees with a basic introduction to Network Simulator 2 (ns2), a discrete event simulator designed for networking research.

Overview:
- What is Network Simulator 2 (ns2)?
  - What are its capabilities?
  - What are its limitations?
- Installing ns2
  - Installing from source
  - Validating installation
- A guided tour of ns2
  - Overview of oTCL
  - Fundamental objects
    - Simulator
    - Nodes
    - Queues

- Links
- Agents
- Applications
- Building simulations
  - Basic simulations
  - Intermediate simulations
- Making sense of the data
  - Introduction to NAM
  - Visualising simulations with NAM
  - Generating traces & graphs
  - Using xgraph
  - xd3d
- Putting it all together
  - Creating functional simulations
  - Generating traces & graphs
  - Reviewing results
- Extending ns2
  - Making modifications to protocols
  - Implementing your own protocols

It is expected that attendees will have a reasonable understanding of TCP/IP and computer networking, including basic knowledge of protocol internals.

Joel is one of the founders of Ionix Technology, a Bendigo based company that provides computing solutions to small and medium enterprise. He is a highly skilled software engineer, with many years experience developing complex software systems. With over six years experience in system administration, Joel is familiar with the installation and configuration of many operating systems and server software.

Joel graduated from La Trobe University, Bendigo in 2000 with a Bachelor of Computing with Distinction, before completing his Honours degree in 2001. He is currently a PhD candidate at La Trobe University, Bundoora.

S3 – Installing GNU HURD from scratch, and creating a strict GPL development environment, *Andrew Chalmers*

The HURD is the GNU projects UNIX replacement Operating System, it also represents a unique frontier for OS development and design. But getting HURD onto your hard drive, whether you are developing, testing out new features or just curious can be a painful process. This tute intends to make it simple if not intuitive.

A far more elegant introduction to the HURD can be found here: http://www.gnu.org/software/hurd/hurd.html

Initially I will take you over the basics:
- Getting the HURD.
- Installing the GNU base.
- Correctly setting up the grub boot loader.

Then we will make the system worth the effort:
- Installing a compiler sandbox.
- Setting up gcc options and additional libraries.
- Setting up the L4 pistachio kernel.
- Setting up an account on the Savannah system.

We will also cover HURD design decisions, new development trends and a little project history.

Full Day Tutorials   **9am – 5pm**

M1 – Security Technology Review, *Peter Gutmann*

Peter Gutmann presents the world's most comprehensive security technology review, the actual content of which will depend largely on the needs and interests of attendees, but drawn generally from the following:

Security threats and requirements, services and mechanisms, historical ciphers, assorted block, stream, and public-key ciphers, hash functions, and signature algorithms, key management, key distribution, the certification process, certification hierarchies, LDAP, certificate revocation, X.509 certificate structure and extensions, certificate profiles, setting up and running a CA, RA's, PGP certificates, SPKI, digital signature legislation, IPSEC, SKIP, SSL, SGC, TLS, S-HTTP, SSH, SNMP security, DNSSEC, email security mechanisms, PEM, PGP, MOSS, PGP/MIME, S/MIME and CMS, MSP, user authentiction, Unix password encryption, LANMAN, NT, and Netware 3.x and 4.x authentication, Kerberos 4 and 5, Kerberos-like systems (KryptoKnight, SESAME, DCE), authentication tokens, SecurID, S/Key, OPIE, PPP PAP/CHAP, PAP variants (SPAP, ARAP, MSCHAP), RADIUS, TACACS/XTACACS/TACACS+, biometrics, PAM, electronic payment mechanisms, (Netcash, Cybercash, book entry systems in general), Digicash, e-cheques, SET, why security is hard to get right, TEMPEST, snake oil crypto, selling security, smart cards, electronic purse standards, PKCS #11, PC/SC, JavaCard/OCF, iButtons, contactless cards, attacks on smart cards, voice encryption, GSM security and how to break it, traffic analysis, anonymity, mixes, onion routing, mixmaster, crowds, steganography, watermarking and so much more!

Peter Gutmann
Peter Gutmann is a researcher in the Department of Computer Science at the University of Auckland working on design and analysis of cryptographic security architectures. He helped write the popular PGP encryption package, has authored a number of papers and RFC's on security and encryption including the X.509 Style Guide for certificates, and is the author of the open source cryptlib security toolkit. In his spare time he pokes holes in whatever security systems and mechanisms catch his attention and grumbles about PKIs.

Half Day Tutorials – Morning   **9am – 12.30pm**

M2 - Secure High Availability Open Source Systems and Solutions, *Mark Uemura*

Today there are Open Source software and systems that rival commercial alternatives. This is especially true in the Security World. This tutorial focuses on building Secure High Availability Open Source Systems and Solutions and are a great example of Open Source at its best.

Tutorial attendees will see live demonstrations for each of the following High Availability solutions:

- **Automatic Stateful Failover Firewalls with rich Enterprise class firewall technology** *Packet Filter, Firewall Redundancy, Logging, Packet, Normalization, Quality of Service, Load Balancing, Authentication, IPv6 Automatic Failover Support, NAT and more...*
- **Secure High Availability Web Servers that are built for...**
  1. Intrusion Detection
  2. Distributed Denial of Service Mitigation
  3. Redundancy
  4. Load Balancing
  5. Unlimited Scalability
- **Secure Wireless Networks for the Enterprise**

This solution addresses the following security concerns: Authentication, Encryption and Firewall protection. More over, there is no lock-in, no extra hardware or software expenditures and it is very user friendly, robust and scalable. Learn how to implement this same solution for your business or organization and find out why it is now being used in one of the largest and oldest services firms in the world.

The objective of the tutorial is to give everyone the tools and how-to information that they need to build their own Secure High Availability Open Source Systems and Solutions for their company. Those attending will receive full documentation for the first two solutions and an authentic OpenBSD 3.7 CD release.

Mark Uemura
Mark Uemura is an IT Manager for PricewaterhouseCoopers (PwC) in Japan. He is also the Deputy Chairperson for the PwC Asia Pacific Information Security Forum. His role is in leading, advising and spear-heading the group on technical security implementations and solutions for all of Asia Pacific Countries and Territories.

M3 - An Introduction To SQLite, *Dan Kennedy*

SQLite is a small C library that implements a self-contained, embeddable, zero-configuration SQL database engine. It is used inside many high-profile commercial and open-source software systems and new projects are adopting it daily. SQLite offers the power and convenience of SQL data storage without the overhead and administrative burden of a tradition client/server RDBMS.

This session provides a detailed introduction to SQLite. Programmers who are unfamiliar with SQLite or who are have only a limited acquaintance with SQLite will come away with all the knowledge they need to assess the relative merits of SQLite and to begin using the library in their own projects.

The following are some of the topics that will be covered:

- A quick overview of SQLite: what it does, it's history, and who is currently using it.
- Distinctive features of SQLite: what makes it different from other SQL database engines.
- A comparison of SQLite to other popular database engines.
- Intellectual property issues: what does it mean to be "public domain"?
- Appropriate uses for SQLite and when a different database might be a better choice
- The SQL Language supported by SQLite
- The native C-language interface
- TCL bindings
- Bindings to other languages: Perl, PHP, Python, etc.

M4 - PHP and MySQL Best Practices, *Luke Welling & Laura Thomson*

Many web programmers use PHP with MySQL. However, lots of hard working programmers work to tight deadlines, are self-taught, and may never have experimented with some of this combination's newer features. In this session, we will look at best practices for using MySQL from PHP, showing how common web development tasks can be made easier, more efficient, or more secure.

Welling and Thomson discuss when and how to use the following features in the web environment:
- Different storage engines
- The MySQL query cache
- Prepared statements for efficiency and protection against SQL injection attacks
- Transactions
- Full text searching
- Subqueries

This tutorial is aimed at programmers who already use PHP and MySQL together, but want to get more out of the pairing.

Luke Welling
Luke Welling lives in Melbourne and is a Senior Software Engineer at Hitwise.com. He has been using PHP for nearly ten years. PHP and MySQL Web Development, co-authored with Laura Thomson (Sams 2004), is the best selling open source programming book of all time.

Luke has previously worked as a programmer for various companies including MySQL AB, run a freelance web development business, and taught computer science and engineering at RMIT University. He is a regular speaker at open source conferences around the world, having given tutorials, sessions, or keynotes at the O'Reilly Open Source Convention, PHPCon, LinuxTag, The MySQL Users' Conference, The International PHP Conference and the Australian Open Source Developers' Conference.

Laura Thomson
Laura Thomson is the co-author of the best selling PHP and MySQL Web Development, has worked as a programmer, consultant, and lecturer. She has taught PHP to thousands of students. Laura is currently a lecturer at RMIT University, creating new open source converts every semester.

Half Day Tutorials – Afternoon   1.30pm – 5pm

M5 - An Introduction to CVS, *David Purdue*

Change control and tracking is becoming increasingly important for technical, managerial and legal reasons.

In open source projects in particular it is important that change is monitored and controlled, while allowing geographically dispersed individual developers to be as productive as possible and just get on with their coding.

The tool of choice for achieving this is CVS - the concurrent version system.

This tutorial will give and introduction to CVS and its use, including:

- Configuration management/source code control concepts and motivation.
- Setting up a CVS repository.
- The CVS checkout/develop/checkin cycle.
- Tagging to define releases.
- Working with multiple developers.
- Remote access.
- Repository maintenance.

David Purdue
David Purdue is the President of AUUG Inc. He has been fiddling with UNIX systems for over 20 years, and has been on the AUUG Board for over 10.

David uses CVS primarily to administer web sites and track system admin config changes - in particular on the AUUG web site.

David works for Sun Microsystems on resolving service issues for Sun's top 50 global customers.

M6 - The Inner Workings Of SQLite, *Dan Kennedy*

This session provides a guided tour through the source code and internal workings of the SQLite embedded database engine. The aim is to make attendees comfortable enough with the SQLite code base that they will know immediately where in the code to look for answer to questions about how the database operates and can confidently make any desired customizations and enhancements.

The material is intended for the following audiences:
- Programmers at companies that use SQLite in their products and that want to support SQLite internally rather than relying on external support contracts or free support from the open-source community.
- System architects who are considering the use of SQLite and who want a detailed under-the-hood look at SQLite to help them make an informed decision about whether SQLite is appropriate for their designs.
- System programmers who want to be able to use SQLite more effectively by understanding what it does behind the scenes.
- Developers of other database engines looking for ideas to help improve their own products.
- Anyone who is just curious about how SQL databases engines work.

The following are some of the topics that will be covered:
- The 6 major subsystems within SQLite, what each does, and how they interact
- The SQLite database file format
- How SQLite insures that transactions are atomic, consistent, isolated, and durable
- The operation of the Virtual Machine inside of SQLite
- How SQL statements are translated into programs for the Virtual Machine
- The assumptions and design principles behind SQLite's query optimizer
- Guidelines for extending, enhancing, modifying and troubleshooting SQLite
- Strategies for porting SQLite to new platforms and operating systems
- The purpose and role of each of the 60 primary source files in SQLite
- Techniques for doing custom builds of SQLite

M7 - Firewalling with PF, *Peter N. M. Hansteen*

The OpenBSD Packet Filter (PF) offers firewalling, NAT, traffic control and bandwidth management in a single, flexible and sysadmin friendly system. Since its initial release as part of OpenBSD 3.0 in 2001, PF has been incorporated in the base systems of FreeBSD, NetBSD and DragonFlyBSD. The objective of the tutorial is to show you the tools and methods for taking control of your network traffic - keeping some of it safely inside or outside your network, directing traffic to specific hosts or services, flexible resource allocation and protection against cracking, DOSing and spamming.

- Background and history
- Packet filter? Firewall? Demystifying some common terms.
- NAT - why NAT was needed, how it works
- PF today - features
- BSD vs Linux - Configuration (for the BSD-curious Linuxer)
- Basic setup on OpenBSD, FreeBSD and NetBSD
- Exploring the basics of rule sets
- Lists and macros and why they are good for you
- Statistics from pfctl - introducing a few information gathering techniques
- Simple gateway with NAT - a common setup explained
- That sad old FTP thing - the cons, cons and whys and hows of ftp
- Making your firewall troubleshooting friendly

- Hygiene: block-policy, scrub and antispoof
- Adapting to changing needs, easily
- The practical sides of logging
- Keeping an eye on things with pftop
- Invisible gateway - bridge (you can filter even if you're invisible)
- Directing traffic with altq
- CARP and pfsync: redundancy and failover - a taste of what is possible
- Giving spammers a hard time - stopping stupidity at $ext_if, greylisting and tarpitting

Peter Hansteen

Peter N. M. Hansteen (b 1963) is Senior Consultant at Datadokumentasjon A/S in Bergen, Norway. A freenix user since the mid 1990s, he tends to networks in between documentation related tasks. Advocates freenixes via the local BLUG and national NUUG user groups, where he is a member of the core group and board member respectively. A member of the original RFC1149 implementation team.

<table>
<tr><td>TUTORIAL PROGRAMME</td><td>Tuesday 18 October 2005</td></tr>
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<table>
<tr><td>Half Day Tutorials – Morning</td><td>9am – 12.30pm</td></tr>
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T1- Building Open Source Secure Wireless Networks for the Enterprise, *Mark Uemura*

Wireless Networks are bliss to users and the bane of Security Administrators. Most wireless networks are insecure by default and security seems to be an afterthought for the users, hardware and software vendors alike. More over, even with security features used, most Access Points use very weak encryption, little or no authentication methods and have no built-in firewall technology. So how can companies utilize wireless technology and still be able to protect confidential information from unauthorized access? This solution addresses the following security concerns: Authentication, Encryption and Firewall protection. More over, there's no lock-in, no extra hardware or software expenditures and it's very user friendly, robust and scalable.

This will be a hands-on tutorial with no time for theory. Attendees will benefit most by bringing a laptop with a wireless device (802.11b/g). This solution was designed/automated for Windows 2000/XP wireless clients but should not be limited to Windows. The Secure Wireless Access Points will be running OpenBSD but should also work for other BSD systems that use pf for the firewall, OpenSSH and that have IPsec support.

The objective of the tutorial is to give everyone the tools and how-to information that they need to build their own Secure Wireless Network at home or for their company. Those attending will receive full documentation and an authentic OpenBSD 3.7 CD release.

Mark Uemura

Mark Uemura is an IT Manager for PricewaterhouseCoopers (PwC) in Japan. He is also the Deputy Chairperson for the PwC Asia Pacific Information Security Forum. His role is in leading, advising and spear-heading the group on technical security implementations and solutions for all of Asia Pacific Countries and Territories.

T2 - A Cryptography Primer, *Laurie Brown*

Data encryption algorithms form an important technical component in providing secure and authenticated electronic security and communications. This workshop is designed to provide attendees with a brief overview of the field of cryptography, the terms, techniques, and algorithms.

It starts by introducing the classical cryptographic techniques which form the foundations of the field. We then survey modern private key ciphers, widely used for bulk and link data encryption, from DES to the new AES encryption algorithm Rijndael. Next we consider public key encryption algorithms and signature schemes, essential for the use of cryptography in large scale, wide area communications. We conclude with a brief look at a couple of cryptographic applications, illustrating the different ways these components are combined to build a security solution.

Dr Lawrie Brown

DR LAWRIE BROWN is a senior lecturer in the School of Information Technology and Electrical Engineering, at the Australian Defence Force Academy (UNSW@ADFA) in Canberra.

His professional interests include cryptography, communications and computer systems security, and safe mobile code. His current research is in the design of safe and secure remote (mobile) code execution environments, currently focusing on the functional language Erlang. He has previously worked on the design and implementation of private key block ciphers, in particular the LOKI family of encryption algorithms.

He currently lectures postgraduate courses in Computer Security and Cryptography, the undergraduate second year core Computing Technology course, and the general studies "Computers in Society" course. He is also an instructor for the CISCO Regional Networking Academy at ADFA.

Additionally, Lawrie is a webmaster on the Internet Project (AUUG Canberra & PCUG) system.

T3 - Optimising MySQL, *Arjen Lentz*

This tutorial examines the many aspects involved when optimising a MySQL application, the MySQL server, and its environment.

Contrary to popular expectations (and habits), hardware will be the absolute last item on our list. The reason for this will become apparent as we build an overall picture and take a closer look at various specific issues.

The tutorial will be highly interactive, using discussions, games, and other ways that insure maximum benefit for all participants. This method of teaching, which is the standard format of MySQL AB training courses, has proven to be much more effective than regular lectures.

Optimisation is certainly not a topic of dry knowledge. Instead it is about gaining the skills needed to analyse the big picture, and recognising the often small but important opportunities. As such, this tutorial provides a particularly valuable experience for intermediate-level MySQL users.

Arjen Lentz

Arjen Lentz (35) is originally from Amsterdam, The Netherlands. Since marrying an Aussie, he decided that Australia is a very nice place to live, so together with their black cat they now reside in Kenmore, a Western suburb of Brisbane, QLD.

Arjen started with programming, but has since branched out to writing, translating, marketing, training and consultancy. He has been working for MySQL AB (the Swedish company that owns, develops and

supports the MySQL database software, www.mysql.com) since 2001, primarily as technical writer for MySQL Documentation Team.

In addition, Arjen teaches MySQL training courses, and maintains contacts with the MySQL community and other organisations in Australia. Arjen co-founded and is actively involved with OSIA, Open Source Industry Australia, Incorporated (www.osia.net.au) and also helps on the press team of Linux Australia (www.linux.org.au).

Arjen is always keen to be involved in open discussions with interested parties about MySQL and the possibilities for Open Source.

T4 - Hands-on NSA Security Enhanced Linux, *Russell Coker*

This hands-on tutorial will cover using SE Linux on a Red Hat platform. Attendees will learn the basic SE Linux administration commands and tasks, including:

- How to view the contexts of files and processes
- How to change the contexts of files
- How to login with a particular context

The SE Linux applications interface with the kernel (which is useful for debugging problems) will be introduced, along with a methodology for writing custom policy for daemons for which there is no policy written.

Russell Coker
Russell Coker has been working on SE Linux since mid 2001. He works for Red Hat on the SE Linux support in Fedora and RHEL. Prior to working for Red Hat he worked as a sysadmin for various ISPs.

Half Day Tutorials – Afternoon	1.30pm – 5pm

T5 - Security Risk Management, *Laurie Brown*

This tutorial will present an overview of security risk management, including the critical risk assessment process. This aims to identify threats to, impacts on and vulnerabilities of information and information processing facilities and the likelihood of their occurrence, in order that these threats may be controlled and minimised at an acceptable cost. Unfortunately, this process is often not managed well. An overview of relevant international and national standards will be presented which provide guidance on this process. The latter part of the tutorial will be a "simplified case-study", walking through an example risk assessment for a hypothetical (though based on actual) organisation, using the process outlined in the recently revised DSD ACSI 33. This standard is mandated for commonwealth government use, but provides good guidance for any who need to undertake such a process.

Dr Lawrie Brown *(See T2 for Dr Brown's bio)*

T6 - MySQL 5.0 in Depth: Stored Procedures, Views, Triggers, Cursors, *Arjen Lentz*

An in-depth look at MySQL 5.0, now available in production.

Views, stored procedures and triggers have long been considered a basic requirement of an enterprise-ready DBMS. Now, MySQL 5.0 introduces support for these flagship features, as well as for a standard SQL-compliant INFORMATION_SCHEMA data dictionary, bringing the popular open-source DBMS several steps closer to matching all the capabilities of the competition.

In this tutorial, each of these features are discussed in-depth, with practical examples. Interesting for all users at intermediate and advanced levels, but particularly useful for existing MySQL users who may not be familiar with these features from other databases.

Arjen Lentz
Arjen Lentz (35) is originally from Amsterdam, The Netherlands. Since marrying an Aussie, he decided that Australia is a very nice place to live, so together with their black cat they now reside in Kenmore, a Western suburb of Brisbane, QLD.

Arjen started with programming, but has since branched out to writing, translating, marketing, training and consultancy. He has been working for MySQL AB (the Swedish company that owns, develops and supports the MySQL database software, www.mysql.com) since 2001, primarily as technical writer for MySQL Documentation Team.

In addition, Arjen teaches MySQL training courses, and maintains contacts with the MySQL community and other organisations in Australia. Arjen co-founded and is actively involved with OSIA, Open Source Industry Australia, Incorporated (www.osia.net.au) and also helps on the press team of Linux Australia (www.linux.org.au).

Arjen is always keen to be involved in open discussions with interested parties about MySQL and the possibilities for Open Source.

T7 - I'm Not Dead Yet! (Tcling For Fun And Profit), *Steve Landers*

Want to develop in a scripting language that is web enabled, portable, object oriented, extensible, supports rapid GUI development, is fully internationalised and localised, byte-compiled, threaded, supports single file deployment, an embeddable web server, supports easy network programming, is fully event driven, has a security model that supports sandboxes, is open source ... and was described by Eric Raymond as "Radically simple"?

No - not Java .... Tcl!

Contrary to the rumours, Tcl isn't dead but is alive and thriving. Sure it doesn't get the publicity and mindset of more "trendy" languages, but has a large, growing and devoted following - especially in some industry segments like telecommunications, automation and electronic design.

This tutorial will take you through the fundamentals of Tcl and Tk (its GUI extension). In addition the tutorial will cover a broad range of resources available to the Tcl developer - including various extensions, development tools and deployment options.

The tutorial assumes a knowledge of programming languages and principles, an open mind and a willingness to have fun when building software.

Steve Landers
Steve Landers is the Senior Consultant at Digital Smarties. He is active within the Tcl/Tk community, where he regularly contributes both software and expertise. He has a particular interest in the development of cross-platform scripted applications, and is a leading proponent of Tclkit, Starkit, Starpacks and Metakit for developing complex and robust cross-platform applications.

Steve has over twenty years experience in the Open Software marketplace, being a founding member of both AUUG and SAGE-AU. He was a pioneer of the commercial application of the UNIX operating system and relational database technology in Australia during the early 1980's implementing the first commercial Unix/Oracle installation in the country.

Steve regularly speaks at conferences, both in Australia and internationally. He has spoken at a number of SAGE-AU and AUUG annual conferences, and was a speaker at the Tcl2001 And Tcl2002 conferences.

CONFERENCE PROGRAMME

WEDNESDAY, 19 OCTOBER 2005

Time	Session	Speaker
9:00am - 9:10am	**CONFERENCE OPENING**	**Adrian Close**, *Conference Chair, AUUG Inc* **David Purdue**, *President, AUUG Inc*
9:10am - 9.50am	**KEYNOTE**	**Brad Templeton**, *Electronic Frontier Foundation*
9.50am -10.30am	**PLENARY**	**Bryan Cantrill**, *Sun Microsystems* OpenSolaris/DTrace
10:30am -11:00am	*Morning Tea Break*	

	CONCURRENT SESSIONS **CRYPTO**	**SYSTEMS AND DOCUMENTATION**
11:00am -11:40am	**Peter Gutmann**, *University of Auckland* Usability Issues For Security Application Developers	**Aftab Alam**, *I.I.T Kanpur, India* Managing client services in a large computing environment
11:40am -12:20pm	**Yi Gao**, *University of Wollongong* Preventing DoS Attacks with A New Client Puzzle Scheme	**Michael Strong**, *Metaskills Pty Ltd* Systems Documentation for Fun and Profit!
12:20pm - 1:00pm	**Steve Landers**, *Digital Smarties* Cryptkit - a high level crypto extension for Tcl	**Malcolm Herbert**, *Monash University* An Introduction to Postscript
1:00pm - 1:50pm	*Lunch*	

	CONCURRENT SESSIONS **SPAM COUNTERMEASURES**	**REAL WORLD**
1:50pm - 2:30pm	**Tobias Eggendorfer**, *Munich University of Applied Sciences* Stopping Spammers' Harvesters using a HTTP-tar pit	**Greg Baker**, *Institute for Open Systems Technologies* It's nearly cheaper to build a smart apartment than a dumb one, but it's much harder work
2:30pm - 3:10pm	**David Purdue**, *Sun Microsystems* Adventures In The Tar Pit - Implementing OpenBSD's spamd	**Martin Schwenke**, *IBM Linux Technology Centre* Recording a Rock Band with Linux
3:10pm - 3:50pm	**Enno Davids** Challenge/Response Email Filtering	**Paul McGowan**, *Yawarra Information Appliances* Online security - mitigating the risks of identity theft
3:50pm - 4:15pm	*Afternoon Tea Break*	
4:10pm - 4:50pm	**PLENARY**	**Damien Miller** Secure Portability
4:50pm - 5:30pm	**FOOTNOTE**	**Brad Templeton**, *Foresight Institute*
5:30pm - 6:30pm	**AUUG Inc - Annual General Meeting**	
6:30pm - 8:30pm	**NETWORKING RECEPTION**	

THURSDAY, 20 OCTOBER 2005

Time	Session	Speaker
9:00am - 9:45am	**KEYNOTE**	**Peter Gutmann**, *University of Auckland* Self-Sustaining Open Source Software Development
9:45am - 10:30am	**PLENARY**	**Dejan Diklic**, *IBM* Challenges of Leveraging Linux in Corporate Offerings
10:30am -11:00am	*Morning Tea Break*	

	CONCURRENT SESSIONS **ISOC-AU**	**OPEN SOURCE OPERATING SYSTEMS**
11:00am -11:40am	**Andrew McRae**, *NetD* Building a Router on Linux	**Luke Mewburn**, *Wasabi Systems* build.sh: Cross-building NetBSD
11:40am -12:20pm	**Tony Hill**, *President, ISOC-AU* Ubiquitous Networks, Open Source and the Future of the Internet	**Andrew Chalmers** An Introduction to GNU Hurd
12:20pm - 1:00pm	**Ian Peter**, *Ian Peter and Associates* Internet Protocols and Governance	**Russell Coker**, *Red Hat* Multi Level Security (MLS) on NSA Security Enhanced Linux
1:00pm - 1:50pm	*Lunch*	
	NETWORKING	**OPEN SOURCE APPLICATIONS**
1:50pm - 2:30pm	**Peter Yardley**, *University of Technology, Sydney* A Complete Network Management System Using Freeware Tools	**Darren Skidmore**, *Melbourne University* Does a FOSS Repository for Tactical and Operational Management exist?

2:30pm - 3:10pm	**Joel Sing,** *Ionix*	**Julian Coyne,** *Unified Business Systems*	
	TCP Over Geostationary Satellite Links: Analysing the Impact of Latency, Delayed Acknowledgments and Initial Window Size	Content Management System strategies for Business and Government	
3:10pm - 3:50pm	**Frank Crawford,** *ac3*	**Mark Uemura,** *PricewaterhouseCoopers IAS Japan*	
	My Home Network	A business case for integrating Open Source into corporate IT infrastructures	
3:50pm - 4:10pm	**Afternoon Tea Break**		
4:10pm - 4:50pm	**PLENARY**	**Mark Uemura,** *PricewaterhouseCoopers IAS Japan*	
		Open Source Secure Wireless Networks in a Windows World	
4:50pm - 5:30pm	**FOOTNOTE**	**Greg Lehey,** *MySQL AB*	
		Free as in free beer	
7:30pm -11:30pm	**CONFERENCE DINNER**		

FRIDAY, 21 OCTOBER 2005

9:00am - 9:45am	**KEYNOTE**	**Chris Green,** *Microsoft*	
		Microsoft and UNIX Interoperability	
9:45am -10:30am	**PLENARY**	**Arjen Lentz,** *MySQL*	
		Confession Time - Deadly Sins Using MySQL and PHP	
10:30am -11:00am	**Morning Tea Break**		
	CONCURRENT SESSIONS		
	DATABASE	**SYSTEMS ADMINISTRATION**	
11:00am -11:40am	**Stewart Smith,** *MySQL AB*	**Carl Makin,** *IP Australia*	
	An Introduction to MySQL Cluster: Architecture and use	The FreeBSD ports system. Using and Abusing it!	
11:40am -12:20pm	**Yi Mu,** *University of Wollongong*	**Narayan Desai,** *Argonne National Laboratory*	
	SQL Structure Rebuilder: Preventing SQL Injection Attacks	Bcfg2: A Pay As You Go Approach To Configuration Complexity	
12:20pm - 1:00pm	**Dan Kennedy,** *SQLite*	**Dean Povey,** *Vintela*	
	Database As Application File Format	Kerberos, LDAP and Active Directory: Single Sign-On for UNIX and Beyond	
1:00pm - 1:50pm	**Lunch**		
1:50pm - 2:30pm	**CONCURRENT SESSIONS**		
	LAMP	**APPLICATIONS**	
2:30pm - 3:10pm	**Luke Welling,** *Hitwise*	**Ahmed Bentiba,** *Etisalat University College, UAE*	
	Building a Simple PHP/MySQL Geographical Information System	The Java Linux Administration Tool, JLAT	
3:10pm - 3:50pm	**Laura Thomson,** *RMIT University*	**Troy Stevens,** *Levi, Ray & Shoup, Inc*	
	PHP Security	Designing an Enterprise Print Solution	
	Edward Stow, *Charles Sturt University*	**Joergen Skogstad,** *Sun Microsystems*	
	Web application benchmarking: An open source TPC-W implementation with LAMP	Applied service- and application provisioning	
3:50pm - 4:10pm	**Afternoon Tea Break**		
4:10pm - 4:50pm	**PLENARY**	**Michael Paddon,** *Qualcomm*	
4:50pm - 5:30pm	**FOOTNOTE**	**Reyk Floeter,** *Vantronix*	
		"Because it has to be free" - Wireless support in OpenBSD	

At time of going to press all programme details are correct. Presentations are sometimes subject to change.
To ensure that you have up-to-date information, please collect a Daily Programme Update
(available at the Registration Desk) for confirmation of presentations and start time.

AUUG 2005 REGISTRATION FORM – TAX INVOICE

AUUG 2005–The Conference for Unix, Linux and Open Source Professionals
Location: Carlton Crest Hotel, 169-179 Thomas Street, Sydney NSW 2000   Tutorials: 16-18 October 2005   Conference: 19-21 October 2005

WHEN COMPLETED THIS FORM SERVES AS A TAX INVOICE. AUUG ABN 15 645 981 718.
PLEASE READ CAREFULLY

Section A1: ORGANISATION DETAILS

Organisation _____

Address _____

Town/Suburb_____ State _____ P/code _____

Country _____ Telephone: Business: _____ Facsimile: _____

Section A2: PARTICIPANT PERSONAL DETAILS

Attendee 1: Title (Dr/Mr/Mrs/Ms/Miss) _____ First Name _____ Surname _____

Position _____ E-mail: (please print)_____ Phone: _____

T-Shirt Size: ❑ Medium   ❑ Large   ❑ X-Large
Consent to include name on attendee list - for distribution amongst attendees ❑ Yes ❑ No (If no selection made AUUG will assume "Yes")

Attendee 2: Title (Dr/Mr/Mrs/Ms/Miss) _____ First Name _____ Surname _____

Position _____ E-mail: (please print)_____ Phone: _____

T-Shirt Size: ❑ Medium   ❑ Large   ❑ X-Large
Consent to include name on attendee list - for distribution amongst attendees ❑ Yes ❑ No (If no selection made AUUG will assume "Yes")

Attendee 3: Title (Dr/Mr/Mrs/Ms/Miss) _____ First Name _____ Surname _____

Position _____ E-mail: (please print)_____ Phone: _____

T-Shirt Size: ❑ Medium   ❑ Large   ❑ X-Large
Consent to include name on attendee list - for distribution amongst attendees ❑ Yes ❑ No (If no selection made AUUG will assume "Yes")

Attendee 4: Title (Dr/Mr/Mrs/Ms/Miss) _____ First Name _____ Surname _____

Position _____ E-mail: (please print)_____ Phone: _____

T-Shirt Size: ❑ Medium   ❑ Large   ❑ X-Large
Consent to include name on attendee list - for distribution amongst attendees ❑ Yes ❑ No (If no selection made AUUG will assume "Yes")

Attendee 5: Title (Dr/Mr/Mrs/Ms/Miss) _____ First Name _____ Surname _____

Position _____ E-mail: (please print)_____ Phone: _____

T-Shirt Size: ❑ Medium   ❑ Large   ❑ X-Large
Consent to include name on attendee list - for distribution amongst attendees ❑ Yes ❑ No (If no selection made AUUG will assume "Yes")

For more than 5 attendees, please attach separate sheet with details.

Section B: CONFERENCE PLANNING

I.   **Tutorials** Attendance is limited. Requests will be processed on a first come, first served basis. Please indicate which tutorial(s) each attendee wishes to attend:

Attendee 1:……………………………………………………

Attendee 2:……………………………………………………

Attendee 3:……………………………………………………

Attendee 4:……………………………………………………

Attendee 5:……………………………………………………

	Full Day Tutorial 9:00am- 5:00pm	Half Day Morning Tutorial 9:00 am – 12:30pm	Half Day Afternoon 1:30pm - 5:00pm
Sunday	S1		S2 S3
Monday	M1	M2 M3 M4	M5 M6 M7
Tuesday		T1 T2 T3 T4	T5 T6 T7

II.   **Conference Programme** Please indicate day/s attending:

Attendee 1: ❑ **Attending the whole conference** ❑ **Wednesday 19 October only**   ❑ **Thursday 20 October Only**   ❑ **Friday 21 October**

Attendee 2: ❑ **Attending the whole conference** ❑ **Wednesday 19 October only**   ❑ **Thursday 20 October Only**   ❑ **Friday 21 October**

Attendee 3: ❑ **Attending the whole conference** ❑ **Wednesday 19 October only**   ❑ **Thursday 20 October Only**   ❑ **Friday 21 October**

Attendee 4: ❑ **Attending the whole conference** ❑ **Wednesday 19 October only**   ❑ **Thursday 20 October Only**   ❑ **Friday 21 October**

Attendee 5: ❑ **Attending the whole conference** ❑ **Wednesday 19 October only**   ❑ **Thursday 20 October Only**   ❑ **Friday 21 October**

SPECIAL REQUIREMENTS:

Attendee 1:   ❑ Vegetarian   ❑ Other:……………………………………..……………………………….. (specify)

Attendee 2:   ❑ Vegetarian   ❑ Other:……………………………………..……………………………….. (specify)

Attendee 3:   ❑ Vegetarian   ❑ Other:……………………………………..……………………………….. (specify)

Attendee 4:   ❑ Vegetarian   ❑ Other:……………………………………..……………………………….. (specify)

Attendee 5:   ❑ Vegetarian   ❑ Other:……………………………………..……………………………….. (specify)

PART 1

TUTORIALS (please note tutorial attendance is not included under the conference registration fee)

	No. of tutorial sessions to be attended		For payment Received Up to 23 Sep 05	For payment received After 23 Sep 05	
AUUG Member–Half Day Tutorial(for each half day tutorial)	……….	@	$360.00	$420.00 (per tutorial)	A$..................................
AUUG Member–Full Day Tutorial	……….	@	$600.00	$660.00 (per tutorial)	A$..................................
Non Member–Half Day Tutorial (for each half day tutorial)	……….	@	$540.00	$600.00 (per tutorial)	A$..................................
Non Member –Full Day Tutorial	……….	@	$800.00	$860.00 (per tutorial)	A$..................................

CONFERENCE REGISTRATIONS   **No. of Attendees**

AUUG Inc., Members	……….	@	$825.00	$950.00 (per attendee)	A$..................................
Members: ACS, ISOC-AU, LUGs, SAGE-AU, Usenix	……….	@	$915.00	$1,040.00 (per attendee)	A$..................................
Non-Members	……….	@	$1,000.00	$1,125.00 (per attendee)	A$..................................
Member Day Registration (per day)	……….	@	$320.00	$445.00 (per attendee)	A$..................................
Non-Member Day Registration (per day)	……….	@	$440.00	$565.00 (per attendee)	A$..................................
Student Discounted Registration (unwaged) ID No.......................	……….	@	$110.00	$165.00 (per attendee)	A$..................................

DISCOUNT 5% discount applicable when registering 2 or more attendees.   **SUB TOTAL**   **A$.......................…......**

10% discount applicable when registering 5 or more attendees.   **LESS DISCOUNT** (if applicable)   A$..................................

TOTAL (PART 1)   **A$.......................…......**

PART 2

MEMBERSHIP: AUUG INC. *(If you join on this form you are entitled to the AUUG membership rate for AUUG2005. Membership valid for 1 year)*

No. of Memberships

Individual:	……….	@	$125.00 (per membership Aust –inc GST)		A$..................................
Name(s) of Individuals:	……….	@	$160.00 (per membership outside Australia)		A$..................................

1) ....
2) ....
3) ....
4) ....
5) ....

Corporate:	……….	@	$480.00 (per membership Aust –inc GST)		A$..................................
Name of Organisation:	……….	@	$600.00 (per membership outside Australia)		A$..................................
....					
Student:	……….	@	$30.00 (per membership)		A$..................................
Name(s) of Students:	……….	@	$ 90.00 (per membership outside Australia)		A$..................................

1) ....
2) ....
3) ....
4) ....
5) ....

SOCIAL PROGRAMME *Full Conference attendees receive 1 ticket each to the Networking Reception and the Conference Dinner.*
If you require additional tickets, please indicate below

Wednesday, 19 October, Networking Reception	$ 50.00	(Number of tickets)	....	A$..................................
Thursday, 20 October, Conference Dinner	$ 95.00	(Number of tickets)	....	A$..................................

TOTAL (PART 2)   **A$.......................…......**

**TOTAL AMOUNT PAYABLE
(PART 1 + PART 2)**   **A$.......................…......**

Cheque/Money Order/Credit Card. Please make Cheques payable to: **AUUG Inc**.

Credit Card Payments: ❐ Bankcard   ❐ Mastercard   ❐ Visa

Card Number: ....   Expires:...

Name on card: ....   Signature: ....

Cardholders Contact Phone Number:…………………………………………………………

NOTE: This Registration Form serves as a tax invoice when completed. Registrations accompanied by total payment only will be processed in order of receipt. Please return this form, plus payment to:

AUUG Inc, PO Box 7071, Baulkham Hills BC NSW 2153 Tel: 1-800-625 655 or (02) 8824 9511, Fax: (02) 8824 9522, E-mail: auug2005@auug.org.au

Programme updates and Birds Of a Feather (BOF) sessions will be posted on: http://www.auug.org.au/events/2005/auug2005/