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Lab and Construction News

Printer Boxes

The Mechanical Engineering Undercroft finally as a printer, housed in an experimental new printer box. We are now planning on a (possibly similar) printer box for the undergrad Thesis Lab.
Another building project that progresses slowly. Discussions with architects progress.

John and his team (including Amalan) have now relocated to the old Visualisation Lab on the ground floor till the building work in rm107 is finished.

Amalan moving out of the basement has freed up that room for David Pisch and his team.

New Thesis Lab Computers

The remaining computers for the undergrad thesis lab have been ordered, have been partially delivered, and should all be installed in the first week of the mid-session break. As we will have a large number of attractive computers unsecured for a day or two during the installation, we will be shutting the lab down for a few days while we complete the installation. People will need to use computers in other labs during these days.

New Help Desk

Another building project that progresses slowly. Much of the building work has been finished, it still needs to be fitted out.

New Systems

The Wireless LAN

Chris Petrov has been looking into a wireless LAN to cover the K-17 building, the garden, and the cafeteria. The final configuration has been selected and is in the process of being ordered. As we will not have access to all of K-17 till next year, we plan to use those base stations to provide wireless coverage of EE3 and the Samuels building for the remainder of this year.

Implementation should be reasonably straightforward and should fit easily into our environment, though no doubt there will be surprises in store.

CSG-supported Linux

This is still Trent’s main project. It progresses a little slowly because of conflicts between design goals and implementation difficulties.

Current status is that Trent has extracted the information he needs from the Debian distribution, and we believe we can install and manage Debian packages reasonably easily (rough edges still to be knocked off). Current work is in integrating the new system to the rest of the CSE environment: passwords, home directories, printing, mail, etc.

As I write (Tuesday 29 August) we appear to be within days of having it on a desk in CSG, and hopefully on desks elsewhere shortly after.
Windows support

Use of StarOffice and the aging Wincenter has proved problematic, particularly with respect to PowerPoint and printing. They mostly work, but for some classes of documents, they simply don’t work.

We have purchased a new server to use as a wincenter replacement, and Chris has started work to see if our preferred solution (using a number of VMware processes each hosting individual Windows OSs) is viable.

A new version of StarOffice (v5.2) is also available, which apparently solves a number of the problems experienced with the current version (v5.1). We will see about trying and installing it soonish, possibly over the mid-session break.

A New Mirror

A new mirror box has been purchased and will shortly replace the current school mirror. It should have something close to 200 Gb of mirror space (compared to the current 30 Gb).

Upgrades and failures

NFS service failures

Over the past few weeks, one of our primary NFS servers, glass, has been crashing leaving very few clues as to the cause. It had been performing flawlessly for about six months previously.

A kernel upgrade and several small kernel hacks did not improve things, and it now appears that it has been an intermittent memory problem. On Saturday 26 August, we swapped the CPU box for another, similarly configured system, plugged the RAID subsystem into the new CPU, and booted this new system under the old name of glass.

The swap happened very smoothly, and so far things are looking good — but it is only a couple of days yet.

We have been running exhaustive memory tests on the old glass and one memory module appears to have problems. So the bad-memory theory seems likely, but we will be keeping a close eye on new-glass for several weeks yet.

Staff Issues

New Staff

We have a number of positions within CSG recently, with some internal moves and several new faces. The new people are:

- Kieran Jones (kieranj) has started in John’s team as a specialist Mac support person.

Of himself, he says:
With a background in Psychology, Kieran Jones fell into Macintosh systems support by accident. Over time Kieran found he could understand the problems of machines better than those of people and therefore made the switch to the IT world. (He also found that machines tended to listen more effectively to advice than humans). With 3 years of Macintosh Support Kieran has learned that there is more to the Mac world than coloured plastic but like all Mac supporters, has trouble convincing others of this (particularly lovers of Unix). Kieran lists his hobbies as dessert cooking, watching sport (with minimum active participation) and collecting empty tuna cans. (One of these is not true).

- Richard Preston (richardp) has started as a new System Support (SS) position.

  Of himself, he says:

  I hold a BSc(Hons) and MInfSci and am currently studying part time towards a PhD at UTS. My background is UNIX (solaris, SCO, MIPS and B31) and NT administration, having previously worked as a Senior Systems Administrator in Industry.

  My skill set includes setting up and managing web servers (Netscape and IIS), project management, system administration (UNIX and NT), shell scripting, installing and upgrading operating systems, configuring Cisco routers and DR planning and validation.

- Slade Matthews (sladem) has also started as a new System Support (SS) position.

  Of himself, he says:

  I have a bachelor of medical science with honours in toxicology due to my long held interest in snakes. My honours work involved the description of two putative alpha-neurotoxins in the venom of the Australian Copperhead snake Austrelaps superbus. Since then I have developed an interest in AI and in computing in general while reading for an Msc (medicine) which involves the use of neural networks to model patient data. I am still working towards the completion of this thesis. I am interested in learning about networking, anything linux and anything else that comes my way with a view to doing more in the unix computing field. I also enjoy mucking about with perl scripts on my home page and at my other job which is also a computer support role, but at Sydney Uni.

  My sporting achievements include recently learning how to catch and subsequently being made captain of my touch football team. This means doing all the paperwork! My other major interest is Australian wine. There is so much variety in our wines that it is rare that i take the time to investigate other nations vintages. However this is not a slight on the offerings from other nations simply a matter of practicality with respect to time and money.
My favourite winemakers would be Ralph Fowler (Leconfield), Brian Croser (Petaluma), and I think Steven Henschke. But that’s not to say that South Australia is the only place for great Australian wine, not by a long chalk. I am also interested in some of the rarer growing areas such as southern QLD and Port Mac. and the Shoalhaven but usually they are more novelty value than serious varietal producers. Indeed grapes such as Chambourcin, Durif and others tend to find there way to these regions more often than their more well-to-do cousins Cabernet and Shiraz. I also enjoy cooking, aged rieslings, cycling and travel.

We did not fill the fifth SS position, and hope to do so around the end of session. I will be advertising it to the school and elsewhere, and would invite interested people to apply.

Although we now have four out of the five SS positions filled, we are still fairly thin on the local knowledge that is required for answering most of the questions that go to SS. Unfortunately, therefore, there may still be delays in answering some questions on the SS queue, particularly if they do not appear to be urgent. I expect Richard and Slade will be pretty much up to speed by the stress period toward the end of session.

Still More People Required?

We currently have in the order of 650 active computers and printers on our network, and this number is growing steadily. It is becoming increasing apparent that we have trouble servicing the ‘hardware’ side of keeping-this-equipment-working, and indeed have no capacity for assisting in other hardware areas such as making specialised cables for research groups.

The new organisation of John’s team, including co-locating its members and a change in problem reporting from the Help Desk, are making it easier to keep track of the extent of problems and the work required to fix them. Over the next few months we will be gathering data, and I suspect that toward the end of session I will propose employing an additional hardware person.

Broadbanding

I am strongly interested in adopting real position broadbanding in the CSG. Currently, most of our positions are CSO 5/6 (for the team members) or CSO 7/8 (for the team leaders). People can therefore be appointed to either of two levels depending on skills and experience. So far this has worked well, but has the problem that someone employed originally as (for example) a level 5 has no way to advance to level 6 except for applying for a newly vacant position. This makes it particularly difficult to encourage junior employees to stay more than a year or two. ‘Train them and lose them.’

In recent years, real broadbanding has been adopted in the Communications Unit and in MISU. I believe it is currently only available for computing staff, but as far as I can see there is nothing preventing other general staff positions from being described in this way.
My proposal will include:

- that there are two new bands, roughly 5/6/7 for team members and 7/8/9 for team leaders.
- that these steps are still bound by the standard University position descriptions; that a person employed at equivalent level 7 must have the skills and experience appropriate for that position.
- that there will be a hurdle between major steps (such as going from equivalent level 5 to equivalent level 6) to show that the person has acquired skills and expertise to warrant the step, but that this can be shown without waiting for a vacant position and subsequent formal interviews.
- that the new performance evaluation procedure may be used as part of evaluating the hurdling exercise.

Future Issues (Discussion Required)

New Labs for next year?

Time is seriously short for setting up new labs for session one, 2001. Given the lead times for initial planning, architects, builders, fitting out (furniture, security, computers, etc) and co-ordinating with the Stage Two move, we are probably too late even if we get space approved somewhere this week.

Session two next year is now critical. The school has decided to set up a Mac lab for 2000s2, but this presupposes that a room is available for it, and this presupposes that the school has been given some appropriate space somewhere. We really have to start planning for that space now!

Replacing faure

The server faure is five years old this year and is due for replacement. We have a budget item for $80,000 to replace it.

Of the likely options:

- Another alpha-based system would give us the fastest straight-line processing speed.
- Intel-based systems (possibly more than one) would give us best ‘bang for buck’.
- There is also as argument for getting a SPARC-based box as, unfortunately, there is still software which requires SPARC hardware and we have few SPARC-based systems in CSE (SPARC systems are way way more expensive than Intel or even Alpha based systems for the type of configuration we are likely to be considering).

Fortunately this requirement is becoming less common, with Linux becoming a preferred architecture for many software suppliers.
My current thoughts on an appropriate replacement are:

- A smallish, fast SPARC-based system (desk-top rather than server-style model, we primarily want CPU-speed and sufficient memory, not large disk-space or multiple gigabit interfaces).

- Several Intel-based systems similar to our recent server purchases. Fast, dual-processor systems with 2 Gb memory in a 2 RU chassis.

We could allocate one of these for long simulations (as faure is currently used); and use two more to allow early retirement of two of haydn, handel or holst, which are still capable boxes, but are now getting relatively slow and consume a relatively large amount of space in the computer room.

The total of these should be comfortably under the $80,000 budgeted. I hope to be ordering a replacement system (or systems) within a couple of months and have it all resolved before the end-of-year catastrophe.

This plan does mean that we are winding back our use of Alpha-based systems. The Alpha architecture still has a speed advantage over current Intel systems, but the edge is not as significant as several years ago, and Alpha-based system are significantly more expensive.

### Replacing Hypertec Computers

We have in the order of 100 Hypertec computers installed in labs, primarily on the third floor on the Electrical Engineering building. The nature of their configuration means that these have been a significant maintenance problem since purchase. This has been further compounded by the fact that Hypertec pulled out of the computer market within days of us ordering these computers.

These computers are now four years old, and although policy requires keeping them for another year, and although they are still generally adequate for typical text-based work, there are a number of advantages in replacing some or all of them at the end of this year.

If the school budget appears to be sufficiently healthy, I will be proposing this in the next month or so.

### Linux Everywhere

For several reasons, I have an interest in using Linux as our primary platform, replacing Intel-Solaris in the teaching labs. Indeed, I have a strong hope that session 1 next year will have Linux in our labs. Clearly one of the major concerns is how difficult it will be to convert our current teaching software to Linux. As soon as Trent has a Linux server available for general access, I will announce it to the school and invite people to check that their software will run on it.
Issues from Previous FC Meetings

Position Descriptions, etc, for John’s Team

Is underway, still. It has been a very high priority for some time, but the past months have been very busy.

CSG Performance Evaluation

The final draft is now available at:


The Commentary document is probably the best place to start.

Confidentiality, Privacy and Security

Still need to pull this together . . .

The gist of this is:

- This discussion is primarily about the privacy of confidential information stored on our systems and transmitted via our network. Much of this is information that people themselves generate, such as e-mail.

- The university already has rules and guidelines relating to use of university computers and the nature of data which may be stored on them. These are most explicitly spelt out for students in:
  
  http://www.infonet.unsw.edu.au/poldoc/rulcomp.htm
  
  and our own Yellow Form at:
  
  http://www.cse.unsw.edu.au/school/facilities/yellowform.html

  Similar guidelines also apply for staff.

- There are related issues about ‘personal information’, information collected about people, their habits and usage patterns. There is Federal and State legislation regarding handling of this information, and UNSW is currently developing policies with respect to the State legislation.

  Of some interest, the Federal Privacy Commissioner has issued Guidelines on Workplace E-mail, Web Browsing and Privacy at:
  

  The substance of these guidelines is that if you are going to collect information about people’s habits and useage, then you should have a clear policy about what, how, why and when you are collecting information; should make this policy public; and should abide by that policy. These guidelines should take into account people’s concerns about privacy.

- My understanding is that current legal opinion is that any data on the employer’s computers belongs to the employer, to deal with as they wish.

  As far as I am aware, this has only been tested once in court in Australia, where an employee was sacked on the strength of e-mail monitoring. The
dismissal was over-ruled, but the grounds for that dismissal were simply that the employee had not been advised that e-mail might be monitored.

- UNSW and CS&E should also have an active policy on confidential information. Our policy should include that there is a general ‘right’ to privacy, that people can expect that their files will not be read, and that anything therein will not be disclosed. Breaches of privacy are either officially endorsed (rare and only in specific circumstances) or are not endorsed and therefore liable to misconduct proceedings.

In general, computer system security should provide adequate safeguards to protect data privacy. In our environment, it is incumbent upon the Facilities Committee and the Computing Support Group (in their respective roles) to maintain it adequately.

- System Administrators have, by virtue of their duties, the ability and (often) the need to breach security and (potentially) privacy. There is a useful discussion on the ethics and responsibilities of sys admins in the Code of Ethics of The System Administrators Guild of Australia (SAGE-AU):


For the CSG, the principle guideline is that ‘root-privileged’ staff should look at as little as possible, only for solving particular problems, be aware that personal files are (unless explicitly publicly readable) confidential, and not pass information on. Where possible, the owner of the information should be consulted.

The position is possibly analogous to telephone operators, who, in the course of normal duty, may be expected to overhear confidential conversations, but are bound not to pass information on.

With this in mind, there are a number of cases in which it is appropriate for limited and judicious probing through personal files by system administrators. Typically these are things like:

- A person reports that they cannot log in. Most likely they have messed up their `.profile`, their `.xsessions`, their `.wmrc`, etc files. It is frequently difficult or impossible to get specific permission to go investigating these files. Standard practice is to simply find the problem, fix it, document the fix in place, send mail explaining the problem and the fix.

- A system change renders a number of ‘standard’ environment variables incorrect. However well these are publicised, many people will still be caught out. It seems then to be appropriate to (semi-)automatically sweep through `.profiles`, etc, making selective changes, documenting the change in place, sending mail, etc.

- Mail requires manual intervention, resulting from either system or personal errors, or ‘bad’ messages (maybe viruses), ...

- Backups may require manual intervention, ...

- If (for whatever reason) we suspect criminal or un-academic conduct, we consult with the School (usually a senior academic), and then may go probing through any files, mail, etc, which may be related.
Additionally, there exist a number of logging and scanning jobs, which collect data that must be considered personal and confidential. Examples of scanning jobs include searching system and personal files looking for security breaches (e.g., setuid files, ‘holes’ in `.rhosts` files). Examples of confidential logs include web/proxy access, which include details about who is reading which pages from what servers.

This information and its collection is covered by the State and Federal legislation referred to earlier. In addition to any requirements of that legislation, this information needs to be considered confidential and treated as such.

- Finally, it should be recognised that, particularly in an academic environment, security is not absolute. E-mail particularly may be vulnerable, but any critical information should be reliably encrypted or, preferably, stored off-line.