Lab Issues

Heat in the Eatery

The new labs in the Mechanical Engineering cafeteria suffer somewhat from heat (from the sun shining on the glass roof and walls). The air-conditioning does not work, and the shutters have been installed. Nevertheless, temperatures in those labs are getting up to 28°C already and with summer looming there is
grounds for concern. We are currently monitoring the temperature closely and reporting high temperatures to Facilities. Our standard practice is to shut the lab if the temperature exceeds 29°C, as equipment failures start to occur above 30°C.

Heat in the Dungeon

Air-conditioning in the Dungeon labs has been problematic since installation. Temperatures regularly reach 26°C and 27°C in those labs.

We have also had to close the organ lab due to high temperatures when someone actually turned off the air-conditioning unit. We are now securing the plant room to prevent this in the future.

Booking terminals, skyterms, printerms

We are still surveying the market for appropriate small-cheap-reliable computers to act as booking terminals, skyterms (displaying the current allocations) and print queue display terminals in the labs. The primary requirements are that it be very small with no cooling requirements and no disc (it will boot discless across the net). Several interesting boxes seem to be available, but not in Australia. The search continues.

In the meantime we will plan to be setting up a couple of old computers to fill in that duty in a couple of the new locations.

System failures and other problems

Problems with eno

We have been having on-going problems with the fileserver eno, which is very nearly of serious concern. It is currently crashing periodically (at intervals of a couple of days to a couple of months), though fortunately it is usually late at night and (by virtue of having an ext3 filesystem) reboots within minutes and so is causing very little practical disruption. No data has been lost or corrupted. The evidence strongly suggests a hardware fault, but most of the hardware has been replaced and the hardware is very similar to several other servers which have been performing perfectly.

There is a full report by Neil Brown in the September CSG Gazette[1].

We plan to change the configuration over the summer to resolve the issue and in the meantime are keeping a very close eye on it.

Problems with weill

weill is our second general-access linux CPU server and it has been having problems since installation early this year.

For completeness, the available CPU servers are:

weill has been crashing frequently, every couple of days or so, but only under reasonably heavy load. The suppliers have not been able to replicate the problem (it is impossible to simulate several hundred students), but have agreed to replace the motherboard (as the most likely cause) and we expect to have weill back shortly. We will be testing it as strenuously as we can before we put it back into service, but clearly we will be anxious about it for a while yet.

Fortunately, wagner and williams have been bearing the load quite well in the meantime and weill’s absence has not been the catastrophe it would otherwise have been.

Power in K-17

Late-breaking news suggests that there is a potentially serious problem with the installation on the power distribution panels on each floor of K-17 (danger of shorting 415 V); and that Facilities (the campus people, not Ric) want to shut all power off to the building for at least four hours to rectify the problem. This will shut down the entire CSE network and cause major disruption.

We are trying to arrange that this not happen till after the exams and will let you know more as we find out.

New Services

Colour Printers

The new colour printer for general access has now arrived and will shortly be installed on the fourth floor. It is a HP 4600, and although modest in comparison with the Xerox colour printer on the first floor it still looks very nice and should perform well for the purpose. It is an A4 600 dpi printer with built-in duplexing which accepts PostScript (level 3) or PCL 6 or 5c.

I hope to be looking at a large-format colour printer during next year, which would be suitable for banners, posters, circuit diagrams, etc. Pricing and likely utilisation are yet to be looked at. It would be nice, but it may no happen.

Radius for our wireless network

We are in the process of installing a radius server for the access points in our wireless network.

Access is granted to the wireless network by having the MAC address of the wireless card registered with the access point (the wireless base stations). Currently this is a list that is promulgated to each access point, the updated
list being rebroadcast to each access point every time a new card is added. This is simple to set up and has served us reasonably well so far. The main disadvantages are that it can be a little slow updating the list on each access point; and the memory for storing the list in each access point is limited to something like 250 addresses.

This last disadvantage has very recently become a serious problem, as more than 250 people have registered their wireless cards with us to use the wireless network. The alternative method is to have a radius server which can be queried by the access points to check whether any particular MAC address is authorised.

Peter Linich has written a small radius server for just this purpose and is in the process of installing it. The switch-over should have no noticeable effect, except that the number of authorised users of our wireless network can continue to increase.

Policies and Procedures

For some time, parts of the CSG have been intermittently working on several proposals for policies and procedures:

Email Guidelines

After discussion at the last Computing Committee meeting, I undertook to produce a web page on email etiquette. The final draft\footnote{http://www.cse.unsw.edu.au/~csg/email-guidelines/index.html} of this is now available.

Self-administered Computers

We are currently putting together policies and guidelines with respect to self-administered computers which are connected to the CSE network.

In essence, it discusses the responsibilities of administering a computer (back-ups, security, etc), what sort of support you can get from CSG (often not very much), what other resources are available, and what happens if \textit{bad things} happen.

There is clearly an attraction in the flexibility of administering your own computer (rather than having to do things the CSG way, being able to install whatever you like wherever you like). In practise, system administration is difficult to do well. Every month or so a self-administered computer in the school is sufficiently vandalised by hackers, infected by viruses/worms or loses everything on an un-backed-up crashed disk that there is no recourse other than reformat and re-install. The cost of self-administration is a lot of work, the threat of getting it wrong is significant disruption. I could maintain my own car, however I choose to get a mechanic to do it\footnote{In practise, I don’t actually own a car.}

This document is still in preparation and will be available for discussion shortly.
Support for Laptops

Early this year the Computing Committee decided to investigate CSG support for laptop computers. Ideally, we would provide the same level of support for laptop computers as we currently do for CSG-maintained linux-based desktop computers.

Things to consider include:

- recommended lists of hardware
- access to a backup service
- timely software upgrades
- security monitoring
- access to other services such as printing and networking

We have not yet done any serious work on this; it is likely to be a summer project.

Over the summer

We are starting to plan projects for the summer period (the time when people get out of our way and we can get some work done :-). As usual, I will be publishing a list of the major work later in the year. At this stage it is very likely that major project will include:

Labs

We will be replacing the computers in the bongo, lyre and kazoo labs.

We also plan to upgrade the network cabling in the third floor labs in the Electrical Engineering building to eliminate an increasing number of connection problems and to allow 100 Mbit (and potentially gigabit) connectivity.

Servers

We have a fairly large farm of small servers in our computer room. Our experience is that these provide a better service than one or two big grunt boxes. These reasons include:

- We are better able to tune the hardware and software to service particular needs,
- Multiple units can be configured to provide easy redundancy,
- Small (single or dual CPU) Intel-based system are relatively cheap and each upgrade is only a couple of thousand dollars.
These days our “servers” are elegant little rack-mounted units a couple of inches high.

We now have seven of our small servers which have reached the end of their useful life (they are generally more than five years old) and need to be replaced. The servers involved are four YP/DNS servers, one print server, one file-server (glass, our original linux-based file-server) and bach which provides miscellaneous services such as samba and radius.

As usual, we will, as much as possible, future-proof our purchases by buying fast little dual-processor boxes with a more-than-comfortable amount of memory. However, services such as YP/DNS do not require a particularly powerful computer and we plan to shuffle some of the upgrades down. For example, we are likely to replace tone, the mail server, which does do a lot of work but which is not yet five years old and use the current tone hardware for one of the YP/DNS servers.

This means that more than seven servers will be affected over the summer period. We will limit the disruption to any services as much as possible and will be advertising any unavoidable disruptions.

Policies and Procedures

As noted above, by early next year we hope to be able to provide much improved support for people laptops (conditions apply). There is still a fair bit of work to do on this.

CSG and Staff Stuff

Alastair Tse leaving

Alastair Tse, who has been working with us as part-time System Support (SS) for about 18 months, has been accepted for a PhD in Cambridge. Good luck, and we wish him well. But he leaves a hole that will not be easy to fill. As any of you who have had dealings with him will know, he has combined a very solid technical competence and keenness to acquire new skills and knowledge with a enthusiasm for helping people and to solve problems (not just symptoms) and a very personable, friendly style. He has been a great member of the team.

We will regret his leaving, but happily wish him well.

His position is currently being filled: it has been advertised, application close Tuesday 22 October, we hope to interview and fill the position within a couple of weeks.

Job Shuffling

As reported in the last CSG Gazette[4] Zain and Trent have swapped desks and significant parts of their duties. Particularly, Trent is now responsible for managing the System Support team (he has plans and schemes for a number of

improvements); and Zain will be concentrating on several programming projects which have needed attention for some time but for which he has had no time (such as automating Seminar timetables, a travelling salesman that has been dogging Zain for years).

There may be other changes; we will let you know about any other plans.

The CSG Gazette Editor

Attentive readers will be aware that the CSG Gazette has now been in publica-
tion for an entire year. Quoting from the first issue from October last year:

During the recent mid-session break, the Computing Support Group of the School of Computer Science and Engineering had its first ever retreat. We talked a lot about things that we do well and things that we could do better, and one thing that stood out as being an area with lots of room for improvement is communication. While we are not particularly poor communicators, we do not always give the issue of communication the priority that it needs.

As one step to address this need we are aiming to produce a series of regular newsletters of which this is the first. This is not the first ever newsletter produced by the CSG, but is the first in a new series, hopefully a series which will be on-going.

The aim of this newsletter is to keep the School, both staff and students, in touch with what we, the CSG, are doing. This will include news about recent changes and developments; interviews with staff, both old and new; behind-the-scenes articles about how we get our job done; and (hopefully) helpful articles about how members of the School can take advantage of available tools to make their time more productive.

The Gazette seems to have been a worthy exercise. It has been a good excuse for the CSG to think and communicate; and the evidence is that a lot of people read it and find it worth reading.

For completeness, the other two main information mechanisms of the CSG are:

- **Reports to Computing Committee**, such as this report. These reports are archived.
- **csg-info@cse**, a mailing list for technical announcements and discussions. This mailing list is also archived.

Neil Brown has been doing a sterling job of editing it (has been the driving force behind making sure it gets written and published). I have greatly appreciated the work he has put into it, but it is now time to pass the baton on.

Starting with the next issue (due out in a week or two) Chris Petrov will be the guiding hand behind the Gazette. Good luck Chris!

---