Computing Facilities Manager’s Report
22 February 2002

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CSG Summer Projects for 2001/2002

The list of projects for the summer period over the summer period are available

There is some updated status information on those pages. The general sum-
mary is that all projects which are critical for the start of session will come in on
time (though some of the timing is pretty tight). The more interesting projects
are also mentioned here.
There is also useful information in the latest Computing Support Gazette
(http://cgi.cse.unsw.edu.au/~csg/news/).

Lab and Construction News

The significant lab changes are:

**Refurbish oboe and harp**

The furniture and carpets in these labs (the western two labs in the Electrical Engineering undercroft) have been in need of replacement for some time. They could also do with a coat of paint, but the nature of time\(^1\) is that the paint will happen later.

Time here is indeed critical, but we are absolutely assured by the suppliers that the tables will be delivered and installed by Thursday 7 March (week 1), and that the carpet will be fully installed by the Tuesday before (probably installed next week, a little earlier).

All this should mean that we can have the labs ready and on line by the start of week 2 (but it will be tight).

**New computers (“bring out your dead!”)***

*The Hypertecs*

The venerable Hypertec computers (our first foray into buying Intel-based workstations) have reached retirement age. A number of lessons about buying such systems have been learned along the way, particularly the need for buying quality monitors and keyboards (we had to replace all the original keyboards after about two years) and getting plenty of memory. With enough memory and a decent monitor the old Hypertec’s are a little sluggish but quite usable.

Most of the computers on the third floor of the Electrical Engineering building will be replaced before the start of session. The list of labs being upgraded is: *gong, fife, flute* and *harp*.

The first set of computers has arrived, the second set are arriving this week (probably Thursday 21 February). These will be running for the start of week 1. The final delivery should be comfortably in time to have all computer installed and on-line by the end of week 1.

Delivery has been staggered because of the lack of storage space in the school. Some 120 computers and monitors take up a large amount of space while waiting to be installed.

The new computers are 1.6 GHz P4s with 512 Mb and 24 bit colour from Dell, Award One and Compucon; replacing 150 MHz P1s with 64 Mb and 8 bit colour.

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\(^1\)Time flies like an arrow; fruit flies like a banana.
The oboe lab

The computers in the oboe lab are also to be replaced with Dell computers with 1.6 GHz P4s with 512 Mb and 24 bit colour, replacing 150 MHz P1s with 64 Mb and 8 bit colour. Delivery is imminent, though installation will have to wait until the carpet and furniture are delivered and installed.

We are also upgrading the software in the oboe lab from Windows NT to Windows 2000; and will be more tightly integrating the oboe infrastructure with our Unix infrastructure. Particularly, password authentication will be against the Unix password database (common passwords, a single user database), and home directories will be on a unix server (integrated file management and backups).

The Dungeon

Three new labs are being built under the Physics Theatre, with a total of almost 60 new computers. This is unlikely to be ready until well into session 1. I hope that the area will be available for the end-of-session peak period.

The Eatery

Two new labs will be constructed as part of renovating the Mechanical Engineering cafeteria, with a total of about 40 computers.

We understand that the new cafeteria will be open during the evening with vending machine food available even later; and that the quality of the food will improve.

This will reduce significantly the amount of seating, even with some planned tables out on the lawn. This is unfortunate, but the net effect should be a significant improvement in several respects.

Unfortunately, it is likely that we will have to vacate the Samuels Building when the Eatery labs are available and the likely shuffling will have the thesis lab moving back into K-17; and the bugle, pipe and piccolo computers moving into the two new labs. This is not a net gain in lab computers.

Booking terminals, skyterms, printterms

One of the results of the survey undertaken by the Help Desk late last year was that it was clear that the provision of booking terminals, skyterms (displaying the current allocations) and print queue display terminals was inadequate.

We are looking at options for replacing these old dumb terminals with their problematic serial cables with a low-profile computer we can plug into standard UTP sockets to provide these functions. As such, they need to be small, robust and reliable. There are a couple of candidates and as soon as the start of session rush is over we will be looking at selecting a model and deploying them. These should start rolling out around the mid-session break.
Linux upgrades

Over the summer, synchronising with the hardware upgrade, we are finishing the transition from Solaris to Linux in the labs. When session 1 begins, all lab computers (with the exception of oboe) will be running Linux.

For several reasons we base our installation on the Debian distribution and the current installed version is Debian’s stable potato distribution. A current project is to upgrade to the testing/almost-stable woody distribution. (There is also a “bleeding edge” sid distribution.)

Woody has been running on several test machines for several months and we expect to have it ready for installation in the labs by the start of session. Otherwise the upgrade will happen at a cautiously convenient time. Woody should look and feel just like potato; the main difference being that it includes later versions of many applications.

New Systems

File servers

For several years we have been moving from “commercial” NFS/RAID systems to cheaper, simpler systems based on Linux and software RAID running on relatively inexpensive hardware. This has brought glass, cage and now eno on-line as NFS servers.

Part of our design philosophy has been to go for a number of smallish NFS “bricks” that can be easily deployed, rather than one or two super-servers. The primary advantages are redundancy, load sharing and a simpler, smoother upgrade/replacement path.

Cautiously-minded folk may remember that we have had some problems with our Linux-based NFS servers. However, I have a fairly high degree of confidence with the current systems. It is a significant advantage having the Linux NFS developer on site; and (for comparison) people with longer memories will recall a number of serious tragedies regarding the proprietary systems bizet, and brahms and liszt before that.

Over the summer period we finally turned off the venerable bizet, the last of the proprietary system; brought eno on-line as an active file server; and have now installed elfman as Neil’s NFS development machine which will be brought on-line later in the year when we need the space and it has been well and truly tested by Neil.

The configurations of our current Linux NFS servers are:

<table>
<thead>
<tr>
<th>Server</th>
<th>Disk Sub-system</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass</td>
<td>2×350 MHz / P2 / 512 Mb</td>
</tr>
<tr>
<td>cage</td>
<td>2×350 MHz / P2 / 512 Mb</td>
</tr>
<tr>
<td>eno</td>
<td>2×933 MHz / P3 / 1 Gb</td>
</tr>
<tr>
<td>elfman</td>
<td>2×1.2 GHz / P3 / 4 Gb</td>
</tr>
</tbody>
</table>

Web / Proxy / CGI servers

We are currently upgrading our web server with new hardware, Linux rather than Solaris and a new version of Apache with SSL support to allow secure transactions with the web server. To this end, we are also getting a public key certificate from Verisign so that people can be more comfortable about trusting us (or at least trusting who we are).

The new web server is called *albeniz* and has $2 \times 1.2$ GHz P3 with 4 Gb memory. It is not yet in use; the transfer over to it should happen in the next couple of weeks and be completely transparent.

We are also upgrading the two proxy servers and splitting the CGI servers off from the proxy servers. This will be a staged process using the the old web server as one of the “new” computers, and a truly new server as the second new computer. This will happen over the next couple of months and should be transparent to users.

Applications server

There have been a number of requests for people being able to run their own web servers or servlets, or their own databases. One of the new servers (*grieg*) has been installed with this function in mind and should be available for use in a few weeks.

The new server is called *grieg* and has $2 \times 1.2$ GHz P3 with 6 Gb memory. There is more information on *grieg* and its use in the current Computing Support Gazette ([http://cgi.cse.unsw.edu.au/~csg/news/](http://cgi.cse.unsw.edu.au/~csg/news/)).

Backup server

Our old backup server, *elvis* (it got its name years ago when it had a different purpose), has reach retirement age and is also being replaced. We are taking the opportunity to revamp several aspects of our backup infrastructure, such as completing the move from writing DLT tapes to LTO tapes using our new LTO tape library unit.

The new backup server, *faure*, has $2 \times 1.2$ GHz P3 with 6 Gb memory and will be brought into production over the next few weeks. We will ensure that all backups continue to run during the switch-over and the change should be completely transparent to users.

Windows Access

VMware

We currently use VMware in two modes.

Personal VMware

This is for people whose primary desktop platform is Unix, but who have a need to run applications requiring a Microsoft platform. This generally works
fairly well, though is not a sensible for someone whose primary platform really is Windows.

**Lab VMware**

We have been running VMware in the *bugle, pipe* and *piccolo* labs, as a means of providing several Microsoft-dependent applications to students. This has been sort-of successful, though there have been serious concerns about the speed of these applications. This is a surprise as VMware is not an interpreter; the application code runs directly on the hardware. We might expect a performance hit of maybe 20%, noticeable but not serious. Reports however suggest significantly worse performance than that. It is possible that disc access, memory image size or other factors are a problem.

We are currently looking at the what and why of these speed problems with the expectation of being able to improve things for session 1.

**Wincenter**

Our venerable Wincenter server is due for replacement. We had been planning to replace it with a Linux server running a number of VMware sessions. A number of problems have made this option untenable.

Our current plan is to rebuild *vivaldi* as a Windows 2000 Terminal Server box and use Matthew Chapman’s *rdesktop* ([http://www.rdesktop.org/](http://www.rdesktop.org/)) to get access to it from Unix computers.

Wincenter (and its replacement) is generally for people who have an occasional need for a real Windows platform. I expect that the use of VMware (either on a personal computer or in the labs) and StarOffice and other Unix tools will diminish the requirement for a Windows server. However it should still be useful for a number of purposes.

**Other options**

Where the main interest is access to Microsoft tools (particularly Office), or at least tools that can manipulate Word and Excel files, there are an increasing number of options available under Linux.

Of particular promise is StarOffice. With versions 5.2 or later running on current hardware it really is quite usable. Anyone who has not tried StarOffice recently (and has been discouraged or disinterested) should try it again. StarOffice does a good job on most Word, Excel and Powerpoint files.

Other applications, such as *gnumeric*, are also quite usable and (for some purposes) integrate better with an X window manager.

**Staff Issues**

**The Hardware Dude**

Peter Chau has very recently joined John’s team. For sometime we have been describing him at the new hardware person. The initial motivation for employing
was that the number of computers in the School is now rather more than Amalan can manage. However with a little sensible shuffling of duties within John’s group we actually went looking for a ‘programmer’ (general computing skills) with an interest in hardware tinkering, making the position more versatile in our ‘interesting’ environment.

Of himself, Peter says:

I have been working as an IT administrator for a company called Berendsen Fluid Power, a manufacturing and engineering company prior to being here at UNSW. My fields of expertise include the MS Windows suites, Citrix and am starting on Cisco routers now. I’m studying Electrical engineering part-time at UTS, but am transferring into an IT related course, working mainly with computers have drawn me away from the electrical engineering field.

I was born in China, and moved here when I was only a few months old. I live with my parents and older brother in the suburb of Canley Heights in Sydney’s south west. I have a few hobbies and interests, including computers, cars, and any new technological gadgets.

Working here at UNSW so far has been excellent. The vibe and atmosphere along with the great people and fantastic team i’m in, is making it a very enjoyable experience.


The Info Dude

A strong suggestion from last year’s CSG Retreat was to

employ an Information Officer, full time for 6–12 months to set various systems up, then possibly dropping back to part-time, with a responsibility for collecting, sharing and propagating information. Information channels would include the newsletter, csg-info, web pages, other on-line documentation, meetings, the primer, other handouts . . . The position would also be responsible for collecting ideas, opinions and information from the school community.

Arguably, this person could sensibly be a focus for information about other school facilities and services as well as those touching on the CSG.

With the current concerns regarding the School budget, this proposal has been postponed.