key*notes*

Thin Clients

—the future of computing?
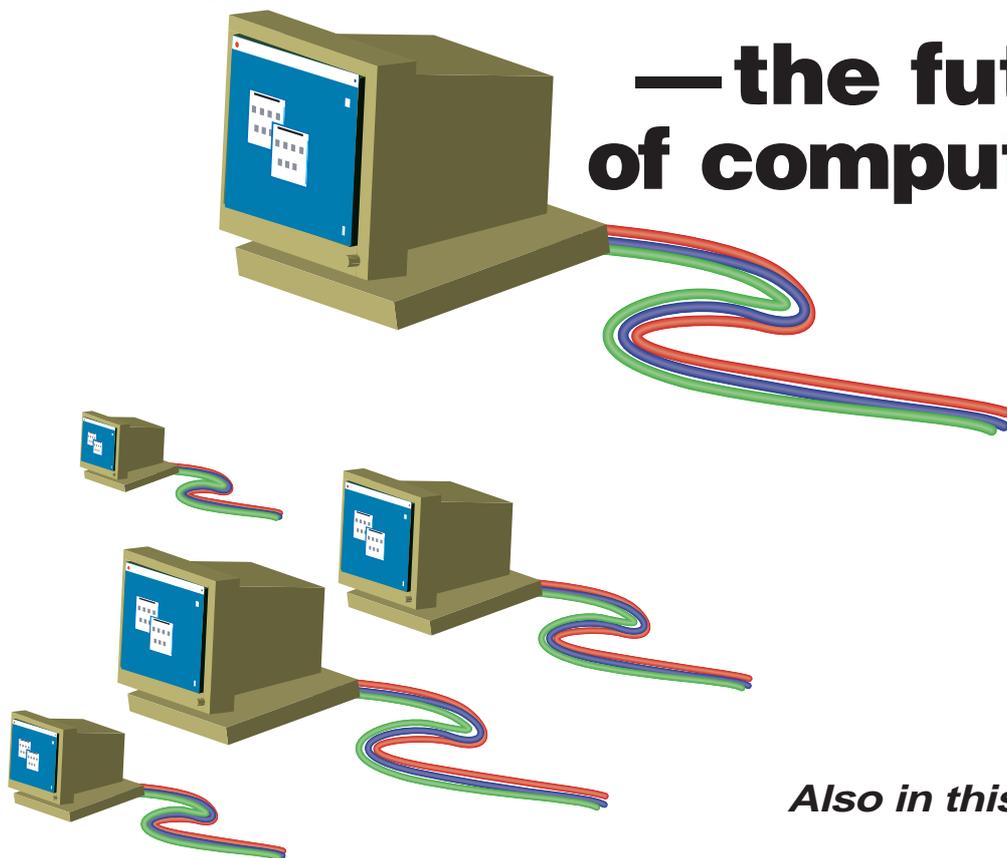
Also in this Issue:

How We Test New Software

Web Search Engines

New YorkWeb Pages

ILIAD

WordPerfect Suite 8 on Windows 95

John Robinson tells you about some issues with the new Office suite.

The last issue of *Keynotes* had a longish article proudly proclaiming that Corel's WordPerfect Suite 8 had 'arrived just in time for us to install it before the start of the academic year'. This optimism proved unfounded—in fact the package was not available until week 3 of term.

There were problems with the conversion of the Corel network installation to our local script-based installation procedures (see the article about Windows 95 for more details). Although most features of the suite worked, with a number of fairly complex documents the system would crash. Ironically, these problems came to light whilst preparing the documentation for teaching WordPerfect 8. This posed an interesting dilemma—was it best to finish the documentation (assuming the package would install correctly), or

spend time fixing the installation, but then miss the print deadline for the documentation?

After a lot of work, tracing each step of the installation and conversion, the problem turned out to hinge on the precise format in which information concerning the network and user paths to the templates and macros was stored in the Windows 95 registry. At present there are still some known problems with the package:

a. The special character sets (Greek, Typographic symbols etc) are not visible until the PC has been re-booted;

b. The Address Book does not work;

c. Some dialogs (**File | Properties**, **Tools | Settings | Display**) not work correctly;

d. The Perfect Expert does not work—well, it does if you ask for help on 'margins', but not for any other words !

e. Presentations takes several minutes to display its first dialog the first time it is run. A similar thing seems to happen with WordPerfect using **File | New**.

We are investigating all of these problems: fixing some of them will require upgrades to the underlying Windows 95 system software. We are also working on converting the thesis-writing template for use with WordPerfect 8. For this reason, and to allow time for users to become familiar with the new menu layouts, the components of the existing WordPerfect Suite 7 will remain available at least until the end of this term.

Information Desk staffing and you

Brian Souter tells you about the implications of our staff shortages.

You may have read in the last issue of *Keynotes* that Matt Dowdy, one of our Information Desk staff, left for a postion elsewhere at the beginning of September. Thus far our search for a competent replacement has been unsuccessful, although we have hopes that the candidates being interviewed on 21 November will change this. It is a difficult job that requires someone with a wide range of computing knowledge, and unfortunately such people are hard to come by. Our staff has in effect been halved from two years ago—we had a part-time assistant helping at the busiest time of day (the lunch period) a while back, but this post has been frozen for the time being.

The fact that the search is still continuing for Matt's replacement has serious implications upon the quality of service that the Information Desk can provide. This will continue for some time, since any person we hire will have to undertake an extensive period of training that will effectively continue through the Spring term. In the meantime, we have only two people answering your queries. The amount of traffic

that James and Paul handle is simply mountainous: for the first 18 days of October alone, they answered 905 phone calls, 2102 in-person queries, and 1595 e-mail messages. If you've ever contacted us with a problem, you can appreciate the amount of time it can take before a problem is solved.

Because the sheer volume of queries is so terrific, and because we have only two members of staff to answer them all, the queues are naturally growing. We are doing our best to provide the members of this University with the best possible service, but please keep in mind the number of people at the desk!

Also, please note that the Information Desk closes early on Fridays, at 4.15 pm.

There are things that you can do to help the situation. Please remember that we have answers to many questions on-line at the Computing Service web site (*http://www.york.ac.uk/ services/cserv/advice*), so try that first. Second, if your query is not urgent, try calling the Answerphone number (**3838**) or e-mailing us (*infodesk*); we

endeavour to answer you within 24 hours. Third, if you query needs a quicker remedy than this, call us and stay on the line; we will process your call as soon as is humanly possible. Finally, if your query is very urgent, then you should come in and talk to us in person. Even then, however, exercise some caution: if you come duing the lunch period, you'll be stuck in a *very* long queue, since this is the time of our highest daily volume. We are doing our best to maintain a high quality of service during a very difficult time; please help us to do so.

That said, James and Paul have been doing the work of three men this term: last year, it took three members of staff to cover the same ground!

?

need help?

Contact the Information Desk by e-mail (Infodesk) or by phone (3838)

Colour printing

Chris Joy tells you about the search for a new colour printer.

The Computing Service is investigating the implementation of a replacement to the colour printing facility which is provided at present. It is likely that this will constitute an A4 format colour laser printer capable of both paper and transparency output. The requirement for larger format colour hardcopy is also being considered.

The colour printer market is a fast moving area of computer technology and the choice of colour inkjet printers runs to a list of hundreds. However, for reasons of robustness, speed and network compatibility, the A4 colour service is likely to come through one of the following laser printers:

Lexmark Optra SC1275n
Xerox C55mpv Docuprint
Tektronix Phaser 560

Further details on the performance of these machines can be made available to interested parties when the evaluation period concludes.

The ultimate aim is to install a high quality printer which provides a low cost per page and can reliably process a high volume of jobs. Making the colour printing accessible at the Computing Service will enable all staff and students to produce colour based reports and presentations with ease and confidence.

New Servers

David Atkin tells you about the new equipment.

Over the Summer we have made considerable progress in implementing various server changes.

The master Network Name (DNS) server has been moved to a new Sun server (castle2).

The Mail server has been moved onto a new Sun server (pump2).

Yet another Sun server (pump1) is undergoing tests as the new print and News server and will soon take over as the primary Web server.

The move of the central filestore from the old Auspex file server (goodram) onto two new Network Appliance filers is now largely completed. Delays in ordering the equipment caused by funding uncertainties, coupled with various hardware and software faults on the larger of the two servers, meant that the final batch of home directories were not moved until the end of the first week of term. We apologise for any inconvenience caused by the timing of this move.

UNIX Access to Home Directories

At present all user home directories reside on the same filestore (known on UNIX as /usr/fsa). This may change again in the future. UNIX users who need to reference other users' files in scripts are recommended to use the "homedir" command rather than using absolute paths.

For example, if you write a shell script to run a program called prog in user zxc3's home directory, instead of using:

```
/usr/fsa/<i>dept</i>/zxc3/prog
```

use

```
homedir zxc3`/prog
```

This will futureproof your script against any changes in filestore organisation.

Staffing Shortages

Mike Jinks tells you all about our staffing issues.

After the failure to recruit a new member of the MIS Group, we readvertised the post, together with the posts vacated by heather Swithenbank and Richard Jardine. This has enabled us to fill two of the posts, with the third to be readvertised. The two new members of staff are expected to join us this month and we will introduce them in the next issue of *Keynotes*.

We have also failed to fill an Information Assistant post which has also been readvertised. This has led to extreme pressure on the Information desk at the busiest time of the year with longer queues both on the telephone system and at the counter. We will be interviewing for the post towards the end of the month and hope to make an appointment on this occasion.

The difficulty in attracting computing staff to Universities is part of a national problem where there are many posts unfilled, and reflects the buoyant commercial market for such skills, particularly as a consequence of the 'year 2000 date' problems.

ATM Networking in Heslington

Robert Demaine tells you about the upgrade to Hes Hall.

The benefits of state-of-the-art networking were extended to Heslington Hall on 4th November. Newly installed fibre optic links from Langwith will be brought into service, increasing the number of links serving the Hall from two to six. These multiple links will connect the university administration into the high-speed campus ATM fabric.

Reporting faults

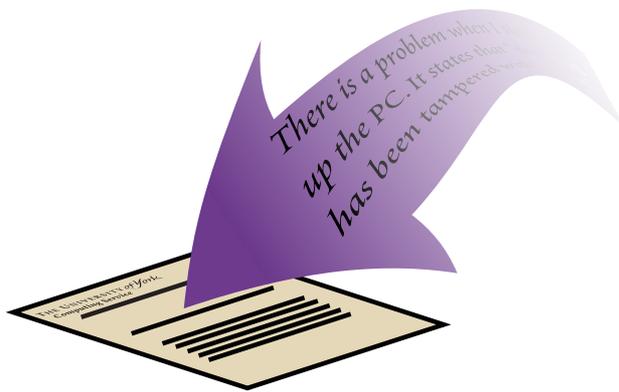**_Doug Moncur_ tells you what to do when the computer goes belly-up.**

Reporting problems and faults by e-mail is really cool, and it saves a lot of hassle hanging on the phone, but sometimes it causes us some problems.

When you've sat there looking at some PC that just doesn't want to play it might be really obvious what the context is, but when we see it in a mail message it might not be quite so obvious what's going on.

Here's a quick guide to what we need to know:

- The name of the computer you're using. If you don't know or are not sure, tell us the room and building it's in;
- What sort of computer is it ? Is it a PC, a Mac, one of the central UNIX machines?
- If it was a PC were you using Windows 3.11 or Windows 95?
- The user id you were using at the time things went wrong;
- What software you were using;
- A clear description of the problem you encountered, and include any error messages you get.

This might look pretty intimidating but in practice it's straightforward—here's an example:

The Security Centre

The Computing Service has new neighbours with the opening of the new Security Centre under the bridge opposite the Morrell Library. As well as feeling a little more secure, we are pleased to note the provision of a Help Desk within the centre to support the University Card. The new Help Desk clerk, Jackie Ball, has been working closely with the Student Office, Library and Computing Service to understand some of the functions provided by the card. Jackie will deal with most card related matters including card issue, lost cards and Mondex problems, but we would expect our Information Desk to continue to deal with username and password difficulties, in the first instance. If we have to refer you to Jackie then at least you won't have far to go!

New provisions in the classrooms

Those of you sitting comfortably in one of our classrooms waiting for your PC to boot will already know that we have managed to replace all the damaged and worn-out chairs. The new chairs are designed to provide height adjustment and swivel without the usual complicated array of levers. We hope this modified design will stand up better to the rigours of our classrooms. Please treat the new chairs with care and do not remove them from the rooms. I'm sure we would all prefer to focus limited resources on new PCs rather than chairs!

Brian Souter

There is a problem when up the PC. It states that has been tampered...

```
From:   ozw1 (Oz Wallaby)

To:        Infodesk

Subject:   PC Problem


I was using one of the PCs in L/117 using the
Windows 95 service and using Netscape messenger for
e-mail when it suddenly said it couldn't contact
smtp.york.ac.uk.


I was logged in as myself. This was about 10.30
today. I don't know which PC it was but it was the
one next the window in the second row from the
front.


--Oz
```

Generally we can handle queries only on systems managed by us, but it's always worth referring something to us if you're not sure who looks after the machine as often we can suggest who to contact. However we can't undertake to answer questions about privately-owned machines or about software for which we have no expertise.

Christmas hours

The Computing Service building, including the Information Desk and entrance lobby, will be closed over Christmas from 12.30 pm on Wednesday 24 December until 9 am on Friday 2 January. Although the Information Desk will open on Friday 2 January we expect to offer a limited service with some support staff not returning to work until Monday 5 January. Computing Service equipment in the colleges and Kings Manor will be available over the holiday period but opening times should be checked with the porters.

Although Computing Service staff are not on duty during the holiday period we will schedule someone to attend to the printers and check the network on Sunday 28 and Wednesday 31 December. The porters should not be expected to report problems to Computing Service staff unless they are of an extreme nature and form part of the standby arrangements set out by Estates and Security. Computing faults will be dealt with as part of the scheduled checks or when staff return after the holiday period!

ILIAD takes off

Debra Fayter tells you all about the success of the student IT training programme.

ILIAD (Information Literacy in all Departments) programme has grown from strength to strength over its two years of operation. Last year selected departments submitted first-year undergraduate and postgraduate students for the course. This year ILIAD was opened up to all departments and October 1997 saw first year students from right across the University enter onto the course.

Demand far outstripped the number of places available (we have 154 students on the waiting list) and it is clear that there is a great interest in the key skills ILIAD teaches. Altogether there are 528 students on the course, some of whom are following a 14-hour standard programme whilst others who have some prior knowledge of IT are following a 10-hour accelerated programme. Both modes of study have the same end point and both offer a University ILIAD certificate and a nationally-recognised word-processing certificate.

This year for the first time we are offering a materials-only mode of study designed for those who have a few gaps in their IT knowledge but who feel they can teach themselves using ILIAD step-by-step workbooks. 195 students have chosen this option (although a good many of these stated that they would have preferred a course had places been available).

Nearly all departments have some students taking ILIAD and many have informed me that the skills taught are essential for effective performance on a degree course. Many departments are building on the skills ILIAD teaches, for example in using e-mail as a standard means of communication with students, by expecting essays and reports to be word processed to a high standard and by asking students not only to research sources of information in the Library but also electronic sources over the Internet.

A course of this magnitude requires a great deal of organisation and the help of a good many colleagues. Outside the University I am particularly grateful to Arthur Andersen for their generous sponsorship of the programme and to York College of Further and Higher Education for providing tutors.

The ILIAD programme will continue to evolve and the next target is to provide a course for second, third and fourth years which will prepare them for the world of work.

Further information about ILIAD can be obtained from Debra Fayter, Information Literacy Course Manager, Computing Service (e-mail *daf3*, x3839 [9.30-12.30]).

MIS news

Trevor Bolton tells you about recent events in MIS computing.

User log files

Each time you submit a job in any MAC application to run in a batch queue, a strong of character beginning with a 'v' will be displayed on the screen. This string of characters is the filename that contains the commands to be executed in the batch queue and a log file is created in your home directory in the ADVAX with the filename being the string of characters and '.log' as the extension. A user may view the log files or other files in your home directory on the ADVAX by using the 99 York option and selecting common facilities to the 'view user files option' after viewing your log file and you no longer require it then please delete it and any other files in your home directory you no longer require.

Data Archive

The ADVAX system will not be available from 0800 on 21 November to 0800 on 24 November. This is due to the archiving of data within the finance module.

New Staff

On behalf of the MIS group I should like to welcome Kay Robinson as Senior Analyst. Kay has had previous experience of MAC applications while at the University of Wales, Cardiff and of COGNOS reporting tools while at the Biotechnology and Biological Sciences Research Council, Swindon.

Also welcome to Kevin Gardner, as programmer in the MIS group. Kevin also has experience of MAC applications in his previous post as MIS assistant at the University College of Ripon and York St. John.

This still leaves us with one vacancy for a programmer in the group.

Management Information System Advisory

Now that the MIS group is back to the full complement of staff, I propose to hold surgeries in HB40 in Heslington Hall.

Booking details for HB40 may be view on the World-Wide Web: *http://www.york.ac.uk/services/ cserv/admin/main.htm*

Web, Mail and Usenet systems news

Mike Brudenell tells you about the upgrades he's been making.

New Servers for Old

Over the Summer the Computing Service has invested in three new computer systems for running important services such as: Authentication; Mail; the Web; and Usenet News.

Previously these key services have had to be run on old, underpowered equipment. For example,

The Usenet News Service has been limping along on an old Indigo workstation with only 24Mb of RAM, and a 3Gb hard disk reclaimed from the long-obsolete VAX system!

The Web Service (YorkWeb) has been running "in the background" on Tower, the general purpose UNIX system.

We anticipate that, once transferred to the new computer systems, these services will benefit from greatly improved speed and reliability.

With the exception of Authentication, the services will be shared between two of the three new machines. Under normal circumstances one machine will run the Mail service and the other the Web, Usenet News, etc. However the two machines are being configured to be as alike as possible. This means that if one of them should fail its services can easily be transferred to run, albeit at reduced performance, on the other. Thus key services will be able to continue with minimal interruption.

At the time of writing the Mail and Usenet News services have already been transferred to their new servers; the Web will follow in due course.

The New Mail Service

The new mail server now handles all aspects of the University's Mail Service: outgoing messages go through it; incoming messages are sent to it for delivery to people's INBOXes; the mail reading (IMAP) service runs on it.

If you have experienced the old, overloaded mail service over the past few months the most obvious improvement will be in the vastly improved speed of access to mail folders. However there are other changes too to further improve the Mail service:

We have eliminated the need to run a central "mail hub" in addition to the mail server. This means messages now go direct to the mail server without needing to negotiate their way through an intermediate machine. This enables messages to be delivered much more promptly.

Validation software has also been installed. This allows the Computing Service to limit, if the need arises, mail arriving from certain sites and / or e-mail addresses. Used judiciously this can help reduce the amount of Unsolicited Commercial E-mail (UCE, also known as "spam") arriving for members of the University.

Having problems reading or sending mail?

If you have configured your own mail software please make sure you use the correct machine names for outgoing (SMTP) and incoming (IMAP) services. In particular we have turned off SMTP services on all of our other machines to stop spammers abusing them. The correct names to use are:

For outgoing mail (SMTP service): smtp.york.ac.uk:

For access to incoming mail (IMAP service): imap.york.ac.uk

The New Web Service

In due course the University's Web service, YorkWeb, will be moved off Tower to run on one of the new servers instead. When this happens we will alter the "www.york.ac.uk" name to point to the new server.

This means you will not have to make any changes to your Web browser's configuration or bookmarks. Instead you should just see an improvement in speed when requesting YorkWeb pages. Whilst running on Tower the Web service was affected by the workload on Tower. Indeed, if Tower was unavailable due to a hardware problem then YorkWeb wouldn't work at all!

The New Usenet News Service

The Usenet News world-wide information and discussion service has also moved onto one of the new servers. Again, you do not have to reconfigure any of your software as we will have redirected the "news.york.ac.uk" name to point to the new server.

As part of the changeover the Computing Service has, on behalf of the University, joined the JANET Usenet News Service. This has a number of benefits:

Faster... Our link to the rest of the world is no longer be dependent on the rather overloaded service at the site that used to feed us Usenet News.

More reliable... Instead of just one "upstream" sites feeding us Usenet News there are now two. Thus if one site should fail the service can continue through the alternate one.

More up-to-date... We are using special software to synchronise the list of newsgroups we carry on our server with those available to us. In the past new newsgroups sometimes didn't reach our server until a member of the Computing Service manually reconciled the lists of groups. The new software will ensure they appear promptly.

Cleaner... The JANET Usenet News Service aims to provide a "clean feed" to UK academic sites, without the newsgroups carrying illegal material. If a University discovers a problem newsgroup it can be reported to the JANET News Service and be removed on a national level.

We trust that, when fully setup, the new servers will greatly enhance the speed and reliability of these key services to the University.

Having problems reading Usenet News?

If you have configured your own news reading software please make sure you use the correct machine name for the Usenet News (NNTP) Service. This should be set to "news.york.ac.uk".

How we test software

John Illingworth and **John Robinson** tell you about the arduous task of compatibility.

Testing software on the Windows 3.1 Service

The York Windows 3.1 system, unlike our Windows 95 system, was originally conceived as a system for classrooms and student use, and only later extended to use in offices. The design criteria were that it should run on diskless PCs and show the same environment to a given user wherever on campus they logged in. A student using a PC in the King's Manor classroom gets the same set of software and the same personal file space as when the same student logs in to a PC in Derwent D/114.

This is achieved by having a local server for each group of PCs which provides most of the software and a set of temporary C: drives. The software on these servers is updated from a master server every night so all the servers remain in step. This a very clean manageable model. As a result of this homogeneity, however, it is difficult to mount specific software for a specific group of PCs; if you put something special on a server it will be wiped away the next night.

Windows 3.1 software typically has four requirements. It requires a directory for the bulk of its software, it requires an icon in one of the program groups on the program manager, it requires to use and possibly insert library files into the system library and it requires entries in the system initialisation files. Not all software has all these requirements.

The first requirement is not a problem. If the software is small and very widely used then it goes on the local servers. If it is large, or of specialist interest, it is stored centrally and accessed across the network.

The second requirement can cause slight problems in that most software creates its own program group for its icons. However, there is an absolute limit of thirty-something program groups, and we hit the magic number some time ago. It is no longer possible to allow the program to create its own group and the icons have to be put in an existing group.

The third requirement causes most trouble. Much software inserts library files into the system library without telling the installer. These files can overwrite existing versions of the same files used by vital software. It is possible for two items of software to absolutely require two different versions of the same library. Even if the over-writing only happens in cases where the new file is a later version of the old file this can still cause existing software to crash. The need to insert special library files for the new application means that the system directories get bigger and bigger and
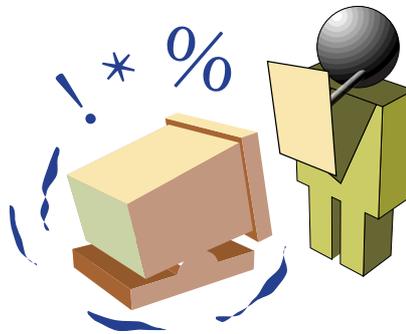
eventually exceed the available space on the servers. For those of a technical bent it is worth noting that if the software changes the system registry file then the manure can really interact with the ventilation system.

The final requirement can be a problem when two software packages require different settings for the same item in a system initialisation file.

New software is installed on a test server which is not part of the nightly update system. After it

has been tested then all the other forty or fifty software items have to be checked to see if they still work. The final step is to compare the amended system with the standard one and ensure that the required changes are propagated into the live system.

This extensive testing system is why the Windows 3.1 Service is generally stable and reliable. Unfortunately, it also highlight why requests to "just put this on the network for a few days so that we can try it out" are extremely difficult to fulfil.

The Windows 95 Service—Why is it done like this?

We are often asked why Windows 95 service in offices and classrooms looks and feels different (and in some ways more complex) from a 'standard' Windows 95 as you would expect to see on any standalone PC purchased over the last few years, and even different from a typical small business network.

The answers are largely to do with the scope and scale of the service we aim to provide, and the computing context in which the service was started.

Who, where, how many?

Windows 95 seems to have been designed with the idea of a single user having fairly exclusive use of a single PC. The system itself allows a few similar machines to be connected together, and there are proprietary networking products which allow scores (possibly hundreds) of PCs to be networked. At York, in contrast, we have a user population of thousands, and any of these users may make use of any of hundreds of classroom PCs; staff and researchers may also have

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access to a number of PCs based in offices (about a thousand all told). In the classrooms we want a common set of applications software to be available on each machine, and each user needs access to his own filestore. Users of office machines also expect this, and in addition want to mount specialist software on their own machines, and keep some files on the PC's own hard disk.

The Windows 3.1 service fulfilled our requirements by holding the operating system and applications programs on server systems (about 20 servers are used to provide an adequate response). The classroom PCs had no hard disks, but office users could use the PC hard disk to store personal files and specialist software. As we've stated above, running the classroom PCs without hard disks has great advantages in providing a stable, predictable and virus-free service.

With Windows 95 the situation is more complex: a hard disk is required (even for classroom PCs), the operating system and applications come from Windows NT servers, but users' files (to maintain compatibility) still need to be accessed from the central filestore using NFS.

For classroom PCs the hard disks (C: drives) hold Windows 95 itself as well as critical portions of applications packages. It is possible that these may be altered, so there is an option in the opening menu to reset the hard disk contents to a known base state [this currently takes several minutes, but we are looking at ways to speed this up]. This reset is performed automatically overnight, or as desired by the user. Users should *not* attempt to store their own files (documents, databases etc.) on these hard disks, as the contents are liable to be erased at any time.

Applications software installations

When a software package installs itself under Windows 95, it copies its own files to a suitable directory, it updates or augments the Windows system files, not unlike Windows 3.1. However, Windows 95 also sets entries in the Windows 'Registry', a database holding information about the computer's set-up and the user's preferences. Packages vary as to how well they are adapted to installing on a network. A package may take typically half an hour to install with the power of machines we have commonly available.

Windows 95 seems to have been designed with the idea of a single user having fairly exclusive use of a single PC.

We want to support as wide a range of software as possible, but not every user wants all the software that we can provide. Installing all these packages would make enormous demands for hard disk space, and it would be impractical to follow the manufacturer's installation method on classroom PCs where disks are cleared regularly. It would also be a management nightmare to keep hundreds of copies of installed packages up to date.

So, instead, for each package, we go through the installation on a test system, and record the changes to the filestore and registry that take place. When a package is run from the **Start** menu, an installer program runs, using information from a script file to replicate these changes on the PC, and for the user. Where possible, files are kept on network filestores, to conserve local hard disk space. The progress is shown in 'Installing Applications Files' dialogue boxes. This system allows a user to install only those applications he needs, avoids unnecessary re-installs in classroom PCs, and allows us to automate software upgrades.

Sometimes a 'package' will install several applications with shared files (e.g., installing any of WordPerfect, Quattro or Presentations will in fact install all three); sometimes a package will install other packages to ensure they are available (using TeX with microemacs requires GhostView, for instance).

It is worth noting that Microsoft seem to acknowledge that there are problems in maintaining large networks with a rich variety of software—much of their proposed 'solution' seems to be involve restricting the user to one or two applications!

Known problems

Although the Windows 95 system and applications on the whole work well, there are some outstanding problems which we are directing our efforts to overcoming:

Sometimes different applications install different versions of the same system components. We try to keep these components at the latest version available to us, but there can be conflicts, especially where users install software on office machines.

Some aspect of an installation may get corrupted. There is a program under **Start | Utilities & Extras | ResetApp** which forces the installer to run the control script again. This can cure many problems.

Sometimes an installation script may fail, or may not be able to update critical system files. Often re-booting the system, and possibly then using ResetApp and restart the installation, will cure the problem.

The installation process cannot update some files which Windows holds open. This gives rise to various problems, most notably with WordPerfect 8 (see the separate article), which can only

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be cured by updating the distribution of the Windows 95 operating system itself. Doing this, and checking that it still works on the wide variety of computers using the service, can take considerable effort.

The classroom PCs cannot directly access NFS filestores. To get access to the users' M: drives, some auxiliary software is run on each server. This, and the changeover to the Network Appliance filestore, have given rise to various problems. It also means that classroom PCs cannot access all the files available to UNIX or Windows 3.1 systems, in particular the teaching software held under 'Courseware'. For this reason, there is at present no courseware available on Windows 95.

When users create shortcuts to applications, these can bypass the software upgrade mechanism, so that the shortcut may refer to outdated or no longer existent software.

A classroom PC user is not automatically guaranteed a 'clean' machine—for instance, I have seen strange messages about print jobs left by a previous user. Also, after logging in, if you see the question 'You have not used this computer before—do you want this computer to save your settings', it is important to answer 'Yes'. This ensures any settings you make are preserved from one session to the next, and also that you do not accidentally get the 'default user's' settings, which can cause problems with certain applications.

k*n*

YorkWeb—Rules and Regulations
***Ray Drainville* tells you about your rights—and responsibilities.**

The University of York makes it really very easy for any individual to publish on the World-Wide Web. This makes it very liberating for anyone who wishes to do so to speak his or her mind, but with this opportunity for self-expression comes serious responsibilities. In fact, when you publish on YorkWeb, you are required to comply with the University's regulations regarding proper use of this service.

The full text of the University's Rules and Regulations is posted on YorkWeb by the Academic Support Office (*http://www.york.ac.uk/admin/aso/ordreg/*). While we have no desire to replicate the material in this document, it is important to point out that the publisher—that is, you—are liable for what you place on the Web. Please make sure that you are respecting copyright and other laws.

The Windows 95 classroom service
***Doug Moncur* brings you up-to-date.**

Over the Summer, most of the public access PCs were upgraded to enable them to run Windows 95 as an alternative to Windows 3.1. The major exceptions are the Compaqs in L/050 and the JB Morrell Library which are too old to be sensibly upgraded, and the scanning PCs in Alcuin. This means that all bookable classrooms can now run Windows 95.

It's fair to say we had quite a few hardware and software problems in getting the service going, but we have now got most of the bugs out of the system and availability approaches what was available on the old 3.1 only service.

The major difference is that users are now presented with a menu on powering up the PC:

```
1       DOS/Windows 3.1 Service

2       Windows 95 Service

9       Windows 95 Service (System Reload)

4       Help
```

Option 1 is the 'old' 3.1 service and option 2 is the new Windows 95 service. Option 9 requires some explanation however. Windows 95 requires a local copy of the operating system to be present on the machine. We had a problem in ensuring that everyone was presented with a clean copy of the operating system. As it takes around 5 minutes to reload completely, we have compromised by setting unattended machines to reboot and reload every 20 minutes or so. Option 9 allows the user to force a reload should they wish to guarantee a clean copy of the operating system.

For the same reason, we have set things up so that any machine which has been powered off overnight will insist on a system reload the first time anyone tries to use Windows 95 next day.

This is different from office machines where we do not take any measures to maintain the integrity of the operating system, and trust that the local copy of Windows 95 is clean. However, the software environment on supported office machines and classroom machines is identical.

Most of the 'core set' of software for the Windows 95 service is available, including database, spreadsheet, presentation and text processing software, as well as web and e-mail access, but courseware is not yet available in the Windows 95 environment, although we plan to provide access to courseware later this year.

YorkWeb gets a new look

Kriss Fearon, the Web Co-Ordinator, tells you about the new welcome and contents pages.

After a year's work on the project and lengthy discussions and consultation, the new welcome and contents pages for YorkWeb went live in the middle of November.

Links from pages held anywhere on YorkWeb to the old main pages were altered by the Computing Service as the pages were put in place, to ensure minimal disruption to users.
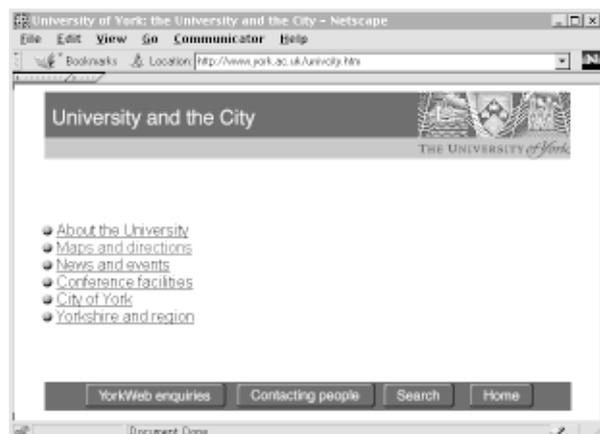
Structure

The most important change is the complete restructuring of the contents pages from straightforward indexes to pages aimed directly at our main users: current students and staff, prospective students, former students and other important groups. The intention is that users will be able to locate the information most relevant to them easily and quickly. These pages are supplemented by traditional indexes where necessary, and with the imminent introduction of a search engine for YorkWeb users should have no difficulty finding information.

The new structure also highlights the amount of time, effort and hard work that many individuals have put into YorkWeb over the last year. Departments have developed their pages for prospective students and their information about research, while most administrative offices now have a welcome page and some have started to add official documents to their pages such as Current Vacancies and the Ordinances and Regulations.

Design

The pages have been redesigned by London-based firm CHD Ltd and now look completely different. Their brief was to reflect the academic nature of the University in a visual style which was welcoming and friendly. The welcome page makes striking use of the University's visual identity, incorporating the logotype and woodcut with a campus map. The colours match the University's corporate colours of deep blue and green. The colour-coded links

Above: YorkWeb's new Home Page, designed by CHD, provides the University of York with a striking new on-line presence.

are offset by contrasting orange buttons which achieves a very clean, simple and strong layout.

The contents pages are designed to reflect the departmental banners, with colour-coding following through from the main welcome page. To aid accessibility there are also text-only versions of the pages.

Feedback

As information is added to YorkWeb, or altered, there will need to be a regular review of the links, particularly on the pages for staff and students. A feedback form will be available and all users are invited to respond with their comments. A working group has been set up to consider these comments which will look at the results of the feedback form, discussions in the _york.web.admin_ newsgroup and suggestions made by mail to individual members of the group, and will implement constructive suggestions. For further details contact the Web Coordinator, Kriss Fearon (_kf7@york.ac.uk_).

What else has changed?

Two important things have changed: the urls of the main contents pages themselves, and the Quick Access list. The URL for the YorkWeb welcome page remains the same.

It was decided that, since most of the entries of the Quick Access list are now either on the main page or within two links of it, it should be deleted. This decision may be reviewed when the working group meets to consider feedback.

Editor's note: members of the Computing Service were extensively consulted for the design, colour correction and implementation of the new pages.

Below: the new contents pages provide a clear, attractive way to access information quickly and efficiently.

Network Computers

Network Computers, thin clients, winterms—what's it all about? *Doug Moncur* **explains the potential revolution in computing.**

Suddenly, the computer press seems full of articles about thin clients, Windows terminals, Net PCs and network computers. Are they all the same thing and do you need to care?

Network computers, Winterms and Net PCs are all examples of thin clients—possibly. The idea behind thin client computing came from Larry Ellison of the software company Oracle, who famously claimed that the PC was a 'preposterous device', and claimed we'd be better off if the processing happened on some big box, and all we had on our desks was a display device.

In a sense we've been here before, in 1989 in fact, when we thought that X-terminals would offer competition for PCs.

X-terminals displayed to output from UNIX servers on a fairly basic windowing device. It was also possible to have software on another type of computer that emulated an X-terminal allowing them to display the output of UNIX software on their screens. We still have such software: eXceed on the PC network is basically an X-terminal emulator.

X-terminals never became popular, probably because they weren't that much cheaper than a PC and there wasn't the commercial applications base of X-compliant software, and it's software that sells systems, not the intrinsic elegance or attractiveness of the system.

There is some politics in Ellison's position of course. What he's really doing is saying that there is an alternative to the Microsoft/Intel vision of a PC on every desk. It's significant that Sun was one of the first companies back the network computer concept.

Network Computers

Network computers are conceived of as being stateless and dataless. This means that you can just turn them off and you don't lose anything and that all the data is written away on a server.

The idea is that the processing takes place on the network computer, but that applications are loaded from a server, a bit like the Windows 3.1 classroom service. Such a model makes it easy to support roaming users, i.e. people can use a different computer every day of the week without having to worry where their data is, and it's also easy to control, and therefore it's easy to manage effectively the user environment.
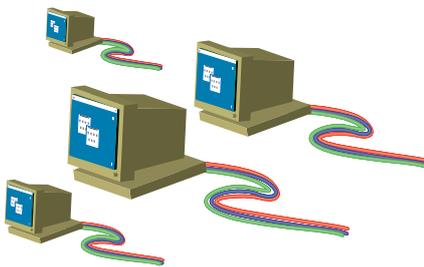
It's significant that Sun is one of the first companies backing the concept.

It isn't rocket science, and it's basically no more than the old diskless PC client, as supported by Netware, PCNFS and Pathworks, among others, dressed up as something new. It's not in fact—it's a culmination of a decade's experience in the effective management and design of server-centric networks with diskless clients.

Network computers do have a unique property though—they're based around Java, and are basically hardware and firmware implementations of a Java Virtual machine. This means that they would connect to the server via the World-Wide Web, and the applications software would be written in Java, which would run on any manufacturer's network computer—vendor- and processor-independent—and could run on software Java virtual machines as well as hardware machines.

The main reason for implementing this scheme in hardware rather than in software is that it's cheaper and faster than software—usually.

However, the dependence on Java is the network computer's undoing. No one has written or ported much in the way of significant real-world applications software to the Java environment, and what there is of it runs fairly slowly. One day they'll get there, but they may find themselves overtaken by the Winterm concept in the meantime.

Winterms

Winterms, or Windows terminals, present an interesting concept. Like Java machines they can be hardware or software, but they have little processing power of their own. Essentially one needs an NT server which runs a set of multi-user extensions from a company called Citrix which allows the creation of a number of virtual PCs running on the server, i.e. when a user logs in it's like they're running their own PC, but actually a number of these are running on the one server, and are independent of each other. This is a bit like the IBM virtual machine concept. It's no surprise to learn that the man behind Citrix used to work for IBM on OS/2 development. OS/2 is renowned for good crash protection and application separation in memory.

All the processing happens on the server and one uses a protocol called ICA3 to display the screen of your virtual machine on your Windows terminal, which can either be a dedicated client, or an old PC with appropriate software. When I write 'old', I mean old—you can even use an old 286 with a network card as a Windows terminal.

ICA3 is fairly low on bandwidth utilisation which makes it usable on a dialup link and would allow users to get their office desktop at home. It sounds too good to be true, but it really does work, and you can access and run Word97 from an old 286 over

(Continued from previous page)

a dialup link.

The ICA3 environment sounds a lot like X, because it is. In fact some OEM versions of the Citrix technology also offer X-support, allowing you to also access applications seamlessley from your X desktop. Citrix call their product WinFrame, but it is also OEM'd by a number of other manufacturers, including Insignia and NCD.

To further complicate matters Insignia have written an ICA3 client in Java, called Keoke, to allow network computers to access applications running on a WinFrame-style server.

A lot of people see WinFrame-style technology as a way of extending the life of their old 386- and 486-based PCs by turning them into Winterms, as well as providing software and filestore access to dialup users.

There are two major problems with going all out for WinFrame—one is the cost of the servers. To support 30 simultaneous connections you need a dual processor Pentium Pro 200 machine with 384Mb of memory, as well as sufficient disk store configured for efficient paging. The cost comes to around £6,000 for the machine and a further £3,500 for a 30-user license—in other words, it is not a cheap solution. However, with a well-specified classroom PC costing around £1000 it does mean that you can support 3 times the users for the same amount of money, assuming you don't need to buy them new Winterms. Purpose-made Winterms cost between £500 and £900 each, which somewhat reduces the cost advantage.

The other problem is the future of WinFrame-style technologies. Citrix used to have a license from Microsoft for NT source-code and permission to modify it to add multi-user extensions. Earlier this year, Microsoft and Citrix re-negotiated the arrangement by which the multi-user extensions will be licensed back by Microsoft and will appear as part of NT Server 5.0 sometime next year—the development multi-user version being known as *Hydra*. There is inevitably a question, however, of the technology's viability, given Microsoft's vision of a full PC on every desk.

Net PCs

NetPCs are Microsoft's and Intel's response to the Winterm and Network Computer bandwagon. Essentially it's a PC without a floppy disk, running either Windows 95 or NT Workstation and using some management technology such as Intel's Landesk to ensure that the integrity of the operating system and the applications loaded locally is maintained and where the user's data is written back to the server. In essence it's a stripped-down PC using a management model not unlike the Windows 95 classroom service. But there's a question as to why you would buy these special NetPCs when you could buy normal PCs for much the same cost. If you're a bank it might make some sense, but, not, I suspect for a University.

Some systems let you use very old machines—you can even use an old 286 with a network card as a Windowsterminal.

Where does this leave us?

While the management software and systems involved in implementing NetPCs could very well be of interest to us, I suspect that we would probably deploy standard PCs in preference to NetPCs *per se*.

The new CD-ROM system being implemented on behalf of the Library incorporates a WinFrame-style server for access from the Windows 3.1 service and for access from non-Intel machines, essentially Macintoshes and UNIX workstations. It may also be cost-effective to deploy such technology in some other places in the University.

Currently, there are a couple of universities in the UK that are going for WinFrame-style solutions to extend the life of their old equipment, and there are a number of other projects in other universities looking at adopting it either at a departmental or campus level.

Likewise if it became necessary to provide access to central facilities to student-owned laptops (as envisaged by the Dearing report), we would probably use something like WinFrame-style servers over dialup links and with public access network ports linked to the servers. However, as the Dearing Report does not envisage this being required until early next century, the technology we would actually use may well be different. In fact one could envisage the typical student laptop being a device similar to Apple eMate—a portable computer with a screen and with software stored in ROM and the data stored in memory—broadly similar to how a Psion operates, but incorporating a modem and either ICA3 or Java machine-style functionality. It is interesting that Psion have already licensed ICA3 client technology, as have one of the major mobile phone manufacturers.

So, today the future might be in WinFrame-style technology, but if someone writes some decent applications software for Java, it may be Network computers. The crucial difference is that WinFrame class systems require fat servers, but network computers don't as the software actually runs on the machine on your desk.
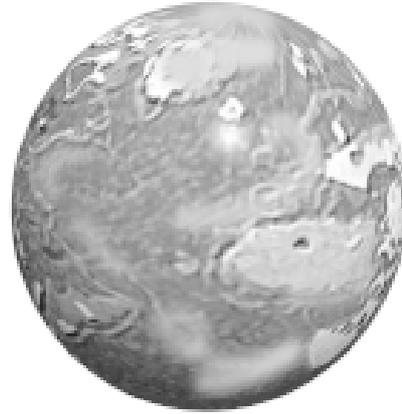
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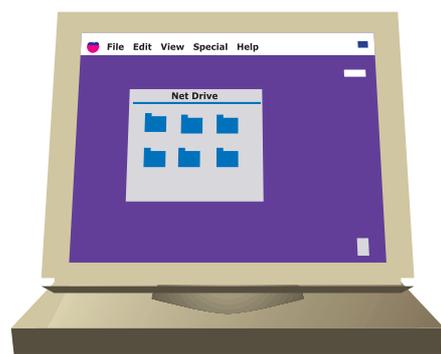
You and your search engine

Gareth Johnson tells you about finding what you want, when you want it.

What is a search engine and why should you use one? Put simply a search engine is a program available on the World Wide Web that allows you to search for sites of specific interest. Without them, you can be reduced to only browsing the Internet and may well miss out on crucial information. If you want to make use of the Internet for serious study then it is well worth spending some time getting to grips with a few of them. Using them is relatively simple. Normally all you have to do is type in a few key words and are rewarded by a list of Webpage addresses (**URLs**) of interest.

Which is the best search engine for you? This is a very debatable question and a lot of it comes down to your own personal preference and the approach you take when searching. Each search engine has its own features and can be quite different in form and function. If you are happy to methodically go through a series of questions about your topic, you'd be as well using one of the directory services such as **Yahoo**. However, since this can limit your search to predefined categories only, they might not have the range and depth of information you want. When you want a specific piece of information then you have to go through a lot of choices, which can prove very time consuming.

What makes a good search engine? A number of things really. **Speed** is important, though like everything on the Internet it slows down in the afternoon, some search engines are faster than others because they are less graphically flash and don't have a lot of moving images slowing the download. **Coverage** and the range of pages indexed is also important, some of the older search engines don't contain quite as many references, or might only reference the first page of a site. If the information you are looking for is within the later pages then you might not find it on a search. At the same time too much coverage, may result in hundreds of references all pointing to locations within the same site, which is not helpful. The **format of results** is also important. While a list of page titles might give you some idea of what you've found, many people (myself included) give their pages totally spurious titles. Sites like **Excite** and **AltaVista** give you the option to see a short extract of text from a page, which can be much more helpful in deciding if you want to visit a page.

If you are new to the Internet or computing in general then you might prefer the more simple search engines such as **Infoseek.** Once you get to grips with these though you might well like to try one of the more complicated looking sites, like **Excite** or **Lycos**, since they will save you a lot of time and effort in narrowing down what you are looking for.

Search engines aren't the be all and end all of searching for information on the World Wide Web. Web directories like **Yahoo** and gateways such as the **NISS** gateway can also prove useful in your searches. While they do allow you to search their contents, they can also be browsed by following a tree of links on a particular subject until you can find pages of interest. Being structured like this does mean that they have sacrificed coverage for content, but at least you can be sure their links are what they say they are. There are also sites such as **SavvySearch** which will actively search a number of other search engines for you, based on the content and context of your key words. There are even some search engines that specialise in subject areas. And perhaps best of all, all these services are absolutely free to use!

No search engine is perfect, but there is bound to be one that is perfect for you. Try some of them and find the one that's right for you! The library search engines page lists all the ones in this article and many more.

k*n*

Sites of Interest

Yahoo—A directory of information, can be slow and doesn't cover everything but a reliable stand by. *http://www.yahoo.com/*

Lycos—Oldie but goldie. Has a very graphic rich homepage that can take some time to load so be cautious of using it during the afternoon. *http://www-uk.lycos.com/*

Excite—A little more complex than some at first glance, but once you get to grips with it becomes a magnificent information searching tool. *http://www.excite.com/*

AltaVista—An excellent search engine, a little past its prime these days but with an excellent coverage, and some invaluable advanced searching options. *http://www.altavista.com/*

LibWeb - lists of search engines. *http://www.york.ac.uk/services/library/subjects/search.htm*

NISS Gateway—Academic information sources available on the Internet. Under constant development. *http://www.niss.ac.uk/*

SavvySearch—A "meta search engine". This is set up to search the databases of a number of normal search egnines on the basis of your enquiry. Can often turn up things you might have missed - though does slow down a lot during the day. *http://savvy.cs.colostate.edu:2000/*

Infoseek—A simple search engine, though with a limited coverage of the Internet. Has recently developed a number of new searches. *http://www.infoseek.com/*

High Performance Computing at Manchester

The National HPC service at Manchester, based on a Fujitsu vector super-computer, terminated on 31 October of this year.

There has been a recent announcement that a new HPC service, based on a 32-processor SGI Origin 2000 system, will start on 1st December 1997. One third of the power of this machine will be available for Class 3 use—this is, projects lasting less than 1 year, which can be authorised and supported by local University computing services. This is much easier to apply for than the Class 1 access (peer-reviewed) which is needed for the Crays at Rutherford-Appleton Labs at Edinburgh.

See *http://midas.ac.uk/vpx/ newclass3.html* for more details, and latest news.

John Robinson

What do *you* think?

Ray Drainville asks you to tell us what you think of the new Windows 95 service.

The Computing Service constantly strives to make computing at the University of York a more effective enterprise. To do this most effectively, however, we need your input.

The Windows 95 service became available with the advent of the Autumn term. What do you think of it? Can you tell us ways in which it is better, or worse, than the Windows 3.1 service? Do you find things easily locatable? Do you have any suggestions for us? Is there anything you'd wish we'd *not* change?

All systems leave room for improvement. But to improve the system in the way *you'd* like us to, we would appreciate a message from you. Please e-mail *info-officer@york.ac.uk* with the subject 'Windows 95 service', and we'll do our best to act upon your suggestions.

The editor of *Keynotes*, *Ray Drainville*, tells you a little about his day.

There's nothing like a 65-mile drive through heavy traffic to make you feel energised, relaxed, and ready to start work. Or something like that. I live in Sheffield, for my sins, and the trek along the A1 has become the bane of my existence, particularly after a small but (so it seemed at the time) dramatic accident.

As the Computing Service's Information Officer (no, I do not wear a uniform), a good portion of my work revolves around documentation, although I teach as well. 'Documentation' is a fairly nebulous term, since it comprises updating or creating new user guides, making posters for the classrooms, updating information on the Computing Service's web site, editing Keynotes and finally attending (and reading the minutes of) various meetings. The meetings alone are enough to make one's ears bleed, since there are so many of them. Yet it's really the only way in which to realise just how much the department is doing, and believe me, the department is doing a lot.

But it's not all text. My background is in the graphic arts—I've worked on CD-ROMs and designed web sites—and (thankfully) I do quite a lot of graphic work for the Computing Service. Recently I worked on getting YorkWeb's new design up to standard, so that it looks right on the various different types of computers we have at the University. You may have noticed that *Keynotes* looks different, and that too is something I've worked upon. Soon, you'll probably notice that the Computing Service's web site will have changed, and that has been a side project of mine for several months—when I have some free time I work on its design with three goals in mind: that it's quick to load, is logically organised and looks good as well. This is tougher than you may think, especially given the sheer amount of information we have on the site. In any event, I'm hoping to have a new, improved Computing Service web site up and running before the beginning of the Spring Term—cross your fingers.

So I spend a lot of time in front of Photoshop and Illustrator, which are graphics applications that provide one with some truly awesome control over the look of images one wishes to create, and PageMaker, which provides one with tools to lay out text for publication. I also seem to be spending an increasingly large amount of time using a product called SiteMill, which allows me to view the structure of a web site and make certain types of global changes with a keystroke. It's amazing how much time spent with so-called 'creative' applications is spent doing repetitive, tedious yet absolutely necessary tasks, because if you become lazy, it's guaranteed that someone will spot your error.

Editor's note: we at the Computing Service are happy to note that we have recently gained four new staff members, and we would like to welcome them: Wendy Wright, Simon Coulton, Kevin Gardener, and Kay Robinson. The director of the department, Mike Jinks, will provide an introduction to them for you in the next issue.

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Fax: (01904) 433740
Email: *username*@york.ac.uk

Information Desk

Telephone: ext 3838
Email: *infodesk*

The Information Desk is open from 9am to 5.15pm Monday to Friday (*closed for training Wednesdays 2pm-3pm*), for problem solving, advice and information, fault reporting, network connections, file conversion, sales, course bookings, registration and documentation. Printed output can be collected from the lobby entrance which is open from 8am to midnight.

Contacting Computing Service Staff:

Director:	Mike Jinks	3801	*kmj1*
Deputy Director:	Peter Roberts	3802	*pdr1*
Departmental Secretary:	Lorraine Moor	3801	*lsm1*
Head of Technical Services:	Dave Atkin	3804	*dla1*
Head of MIS:	Trevor Bolton	2100	*tfb1*
Head of User Services:	John Illingworth	3803	*jji1*
Head of Personal Systems:	Doug Moncur	3815	*dgm1*
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Su Ashton	3825	*sma3*		Vivienne Hemingway	3818	*vwh1*
Sue Bolton	2102	*sjb28*		Chris Joy	3807	*cj8*
Paul Bowen	3821	*pab7*		John Mason	3813	*jrm13*
Mike Brudenell	3811	*pmb1*		Operators	3832	*opr*
John Byrne	3812	*jcb1*		Colin Rea	3817	*cr9*
Paul Conacher	4346	*pac1*		John Robinson	3833	*jsr1*
Robert Demaine	3808	*rld1*		Andrew Smith	3809	*abs4*
Debra Fayter	3839	*daf3*		Laurence Tyler	3807	*lgt1*
Rob Fletcher	3816	*rpf1*		James Walker	4347	*jaw1*
Peter Halls	3806	*pjh1*		Timothy Willson	2123	*ftmw1*

If you wish to receive *Keynotes* by post please complete this cut-away slip and return to: The Secretary, Computing Service, University of York, Heslington, York, YO1 5DD.

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(Tick as appropriate)

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Please remove my name from the mailing list. ☐

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