

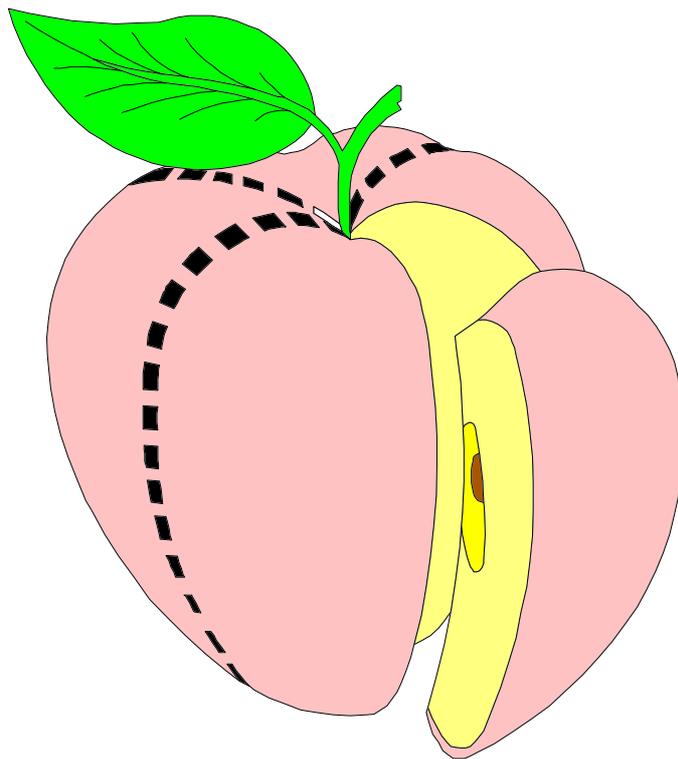
THE UNIVERSITY *of York*
Computing Service

key notes

Summer Special September 1998

Review Revisited

Core and non-core services – a new approach



Also in this Issue:

Computer Classrooms in 1998-99

New YorkWeb Features

ALPHA Computers – update

Java on the Campus Network

key *notes*

Summer Special September 1998

contents

news in brief

| | |
|--------------------------------|---|
| Computer Classrooms in 1998-99 | 1 |
| Windows 98 | 1 |
| The Unix Development Programme | 1 |

review revisited

| | |
|------------------------------------|---|
| Computing Service Review Revisited | 2 |
| — Specific Changes | 2 |
| Charges for Non-Core Services | 3 |
| New and Upgraded Facilities | 3 |

web news

| | |
|--------------------------------|---|
| New YorkWeb Features | 4 |
| — The Search Page | 4 |
| — The Local Web Cache | 4 |
| — Usage Statistics | 5 |
| — Plans for Personal Web Areas | 5 |

mis news

| | |
|--------------------------|---|
| ALPHA computers – update | 6 |
| MIS News In Brief | 6 |

other news

| | |
|--|---|
| Java on the Campus Network | 7 |
| Teaching Software on Campus PCs | 7 |
| Move to Microsoft Office | 7 |
| National Services | 7 |
| Staff and Graduate IT Training Courses | 7 |

From the Editor

Welcome to the Summer Special edition of *Keynotes*. Some major developments are taking place within the Computing Service during the summer, and we are thus taking this opportunity to let you know about them before the start of term.



In particular, on pages 2 and 3, Mike Jinks outlines the changes which result from the Review of the Computing Service Review, including the introduction of core and non-core services.



You may also be interested in reading about the upgrades to the computer classrooms and to the central Unix service (see page 1), and about the new features recently introduced in YorkWeb (see pages 4 and 5).



Keynotes is normally edited by the Computing Service Information Officer. Following the departure of Ray Drainville in July, however, I got the job for this edition! We hope to have a new Information Officer in post for the start of the autumn term.

Lorraine Moor
Departmental Secretary

Computer Classrooms in 1998-99

Doug Moncur/Brian Souter

PC Classrooms

Windows 3.1 will be withdrawn on 25 September 1998 from all Computing Service managed classrooms. Staff machines remain unaffected. We are currently in conversation with those departments to whom we provide Windows 3.1 classroom services about the future of their classrooms.

We will be upgrading L/117 and D/114 by replacing the elderly 486 based machines with Pentium II based multimedia machines. The now very elderly Compaqs in the J.B. Morrell Library and L/051 will be phased out to be replaced by some of the 486 based machines withdrawn from classrooms. The remainder of the ex-classroom 486 based machines will be used as spares to replace machines in Goodricke and Wentworth as they fail. However, as machines last longer if they're used, we will be installing them in G/169,

but they will not be counted in the number of bookable machines for G/169.

The precise installation dates for the new equipment in classrooms are not yet known as some of the installation work has to be done in conjunction with the refurbishment of Derwent College. However, we would expect that these changes will be completed in time for the start of the autumn term.

In addition a new classroom will be installed in V/058, again equipped with Pentium II based multimedia machines. This classroom should be on stream by early in the autumn term.



Ideally, we would have liked to retire all the elderly 486 based systems this year, but funds simply can't stretch to it. However, once V/058 comes on stream, almost half of our public access PCs will be Pentium II multimedia machines.

Unix Workstations

At the same time as we're upgrading D/114, the equally venerable SGI Indigos in D/104 will be replaced by the same number of SGI O² workstations, principally intended for project work and use by graduate students (see Chris Joy's article below).

Printers

We will be installing a new HP8000DN in V/058 as a classroom printer and buying a further two HP8000DN printers to replace the elderly HP IIISI classroom printers in Alcuin and King's Manor to improve the reliability and availability of the self service classroom printing service.

In addition we will be buying a further two HP8000DN printers to replace existing printers which are coming to the end of their useful lives.

Windows 98

Doug Moncur

The Computing Service does not intend to support Windows 98. The preferred operating system will remain Windows 95 pending the introduction of an NT-based classroom service in summer 1999.

Any machine ordered for use as a supported machine on the campus network should be ordered with Windows 95.

Should anyone wish to connect a Windows 98 based machine to the campus network, the Computing Service's involvement will be restricted to registering the machine in the LAN database and providing an IP address and such other information as is required to configure TCP/IP. No support can be provided for Windows 98 or for problems encountered with its use.

The Unix Development Programme

Chris Joy

It is now possible to confirm that the ageing Unix servers and workstations will be replaced by the start of the 1998-99 academic session. Details of the changes can be found on the Unix Development Programme web area. This can be accessed by following the Unix developments link on the Computing Service homepage, or by going directly to <http://www.york.ac.uk/services/cserv/unix/devel/>.

The Unix Development Programme web area will continue to be the central repository for information on how the changes will affect you. **Please check back on a regular basis.**

Current important information includes an overview of the changes to the interactive Unix service and the implementation timetable. There are also some facts on how access to the systems will be controlled.

Computing Service Review Revisited

Mike Jinks

At its recent meeting, Planning Committee accepted the recommendations of the Working Group set up to review the implementation of the Computing Service Review in the light of changed circumstances and concerns expressed by Heads of Department over the introduction of the regime of core and non-core services. In particular the Working Group expressed concern at the potential consequences, financial, strategic and administrative, of implementation of the Review along the lines originally proposed, and the implications of doing so for successful development of a coherent University Information Strategy.

The main changes are:

- The concept of core and non-core services will be retained, but the range of services covered by the core, and hence funded from the central top-slice, will be extended. In particular, aspects of 'research enabling' and development of administrative systems now form part of the core.

- A simplified charging structure will be introduced. Charges for standard non-core services will be determined annually by the Information Committee and will no longer need to recover the full costs of delivering the service.
- The baseline funding of the Computing Service will be increased to fund the appointment of two additional members of staff in the Computing Service: a network support person and a technician with responsibilities for PC support.

Planning Committee accepted that these changes would not solve all the problems faced by the Computing Service but that they should go some way towards ameliorating the major difficulties.

The Information Committee subsequently agreed charges for the standard non-core services for the next academic year.

The Report of the Working Group is available on the Computing Service Web pages.

Specific Changes

As mentioned above, several previously chargeable, non-core services have become centrally funded core services. The major specific changes are:

University Network

The provision of network connections to staff offices will be subject to an initial charge (waived for connections which are already active) together with an annual charge as at present. It is intended to collect this annual charge in monthly instalments.

Network Services

The Service will be responsible for support of Library networked information services in addition to providing access to them as at present, ie the Service will install CD-ROMs etc for the Library etc.

Filestore

The Service will be able to allocate central filestore on the basis of normal operational requirements rather than providing a fixed allocation per username. This continues the current arrangements rather than implementing those specified in the original Review. Substantial amounts of additional filestore are available as a chargeable non-core service, as at present.

Central MIS Functions

The Service will be able to develop systems to improve administration.

Training

The arrangements for charging for training have been simplified. All people attending a course booked through the Service will be charged a £10 booking fee. This will include provision of up to £2 for documentation. Larger amounts of documentation will be charged at cost.

Advice and problem resolution

The Service will be able to provide advice on development of administrative systems and 'enabling research' as core services. Research enabling includes academic contact and application of IT techniques to academic problems in which a small time commitment by the Service could produce significant benefits. More extended involvement in research remains a chargeable, non-core service. Similarly involvement of Service staff in academic teaching remains a chargeable, non-core service.

As part of the implementation of the original review, the Information Committee agreed a *Service Guide* which defined the general principles under which the Service would operate. This document was not published as the 'Review of the Review' was initiated at that point. The Service is updating the original *Service Guide* in the light of the recent decisions and is incorporating the 'commentary' on the core and non-core services from the 'Review Review' report. The *Service Guide* will thus outline the core and non-core services as well as the general principles. This guide will be made available as part of the general documentation on the Web, but printed copies will also be sent to members of staff as the document will be necessary as a reference source in the coming year.

Implementation of all the service definitions and the other recommendations for the operation of the Service will require a considerable amount of effort. Implementation of specific aspects will thus be phased, but the existence of the *Service Guide* will provide a reference point to enable the overall objectives to be visualised.

Charges for Non-Core Services

Information Committee agreed charges for the standard non-core services, ie those which will be delivered at fixed cost. Further information on the charges are available on the Web, but a summary is provided here:

| Service | Description | Charge | | Notes |
|---------|-------------------------------|-------------------|-------------------|---|
| | | Initial | Annual | |
| N1 | Additional usernames | | £10 | |
| N2.1 | Connections to offices | £30 £30 £30 | £48 £84 £60 | Standard connection - 10Mbit/s ethernet Terminal mode Fast ethernet - 100Mbit/s |
| N3.1 | Additional filestore | £100 | £100/Gb | |
| N3.2 | Restoration of archived files | £10 | | |
| N3.3 | Restoration of deleted files | £25 | | |
| N6.1 | Standard set of PC software | | £100 | |
| N8 | Training | £10 | | Booking fee |
| N10.9 | PC installation | £50 | | Non-standard PC installation |
| N10.12 | Supported network connection | £35 | | Installing supported connection excluding material eg network cards |
| N12.1 | Printing | 7p/sheet | | |
| N12.3 | Departmental printer | £25 | | Setting up departmental printer on network |

In addition the Service will levy an administrative charge of 5% of order value for all purchases with a minimum of £10, except that orders for PCs will be subject to a standard charge of £25.

Mechanisms for collecting these charges need to be implemented and will require further discussion; details will be provided when available. It is likely that we will build on the system for charging printing costs to minimise the administrative effort both in the Service and in departments.

All other non-core services are subject to quotation by the Service and requests for these should be made to the Deputy Director, Peter Roberts. Requests for the standard non-core services should be made to the Information Desk.

New and Upgraded Facilities

Mike Jinks

The funding of the Service has been put on a more secure footing which should enable the Service to plan ahead in future. The major areas of capital expenditure for 1998-99 are as follows:

- Additional central filestore.
- Replacement of the current Tower and Ebor systems by much more powerful SUN systems and provision of a separate mail system for UNIX-based mail.
- Upgrades to the network infrastructure to develop the ATM networking and discontinue the FDDI ring.
- Provision of a 'firewall' system between the campus network and the external links to YHMAN and thence SuperJANET. This is necessary to provide increased security by regulating incoming access to our systems, but will also provide a mechanism to restrict external access should this prove necessary as a consequence of charges for international access.
- Replacement of the SGI workstations in D/104 by much more powerful SGI systems capable of running the latest versions of applications software.
- Replacement/upgrades to the PCs in G/169, L/051 and the Library.
- In addition, a new PC classroom, V/058, is scheduled to be brought into service early in the autumn term.

Further details of some of these changes are given elsewhere in this edition of *Keynotes*.

review revisited

New YorkWeb Features

Mike Brudenell

Over the past few months two new features have been added to the University's World-Wide Web Service, YorkWeb. The first and perhaps most visible is the long-awaited Search Page. The second is the introduction of a Local Web Cache. Both of these are described in more detail below, along with an update on the Usage Statistics reports and proposed plans which would affect people with Personal Web Areas.

The Search Page

An indexing/searching system has been set up to enable people to quickly and easily find YorkWeb documents on particular subjects. Words can be entered into a form on the Search Page and then, within a few seconds, a list of (hopefully!) relevant documents will be displayed.

The Search Page can be reached by using the "Search" button on the navigation bars of many of YorkWeb's top-level pages. Alternatively you can go to it directly at the URL: <http://www.york.ac.uk/cgi-bin/search>.

The search system runs an Indexer each night that inspects every page on YorkWeb linked directly or indirectly to the main home page. Each document's content is included in a database along with an extract of its text. When someone uses the Search Page this database is consulted to find appropriate documents.

This means that documents which are added during the day will not be "found" by the Search Page until the next night's Indexer has completed.

Similarly any documents which are deleted could still appear in the Search Page's results until the Indexer next runs. In practice this should not pose too great a problem: indeed it is how the large Internet-wide search systems - AltaVista, Excite, etc - work.

Further enhancements are planned to the searching facility, including the ability to restrict a search to a particular sub-section of YorkWeb.

Please note that the Indexer only scans pages within official YorkWeb areas; it does not include the content of people's Personal Web Areas.

If Personal Web Areas are moved to a separate web server - see opposite page - then a Search Page may be set up for them too.

The Local Web Cache

What is it?

As you may be aware UK universities are now charged for Internet traffic they receive from the USA. A very large proportion of such charges is caused by people browsing web pages held on servers in the USA.

In order to reduce our University's charges the Computing Service has set up a "proxy server with caching," otherwise known simply as the Local Web Cache.

A "proxy," according to my nearby dictionary, is "one acting as agent or representative for another." In this case our proxy server operates in place of the web server at the site you are trying to reach: instead of contacting the web server directly your web browser requests the item from our proxy server. This then passes on the request on your behalf, obtains the page, and returns it to your browser for display.

The cunning step is that the proxy also keeps a copy of the page for a while. If someone else requests the same page it can be given to them directly from this "cached" copy instead of having to transfer the document again over the Internet.

This has a number of benefits:

- Subsequent requests for a document are satisfied from the copy cached on disk. This is almost instantaneous: you see the page far faster than if it had to be fetched across the Internet.
- Because requests can be satisfied from the cache's disk instead of the Internet less network traffic is generated. This helps keep down the cost of our international charges.
- When our Local Web Cache needs to retrieve a page from an original site it does so by asking the National Web Cache to obtain the document on our behalf. Thus any resulting international traffic is charged to the National Web Cache instead of ourselves. Currently they do not pass such charges back down to us: another saving.



How to use our Local Web Cache

To use our Local Web Cache you need to ensure your web browser – Netscape Navigator, etc – is configured to know about the service.

People using Supported PC Connections will already have this set up in most cases.

Here is how to check/set your browser's configuration (these instructions are for people using Netscape Navigator on a Supported Windows 95 PC):

1. Start Netscape Navigator.
2. In the "Edit" menu select the "Preferences" item.
3. Click on the "Advanced" item at the left of the window displayed, followed by the "Proxies" item.
4. Select the "Automatic proxy configuration" radio button.

5. In the "Configuration location (URL):" text field enter this, taking care to type it in exactly:

<http://www.york.ac.uk/proxy.config>

6. Press the "Reload" button just below this setting.
7. Press the "OK" button.
8. Sometimes the Reload button does not work properly: you may need to exit from Netscape Navigator and re-run it.

If you are using some other web browser you may need to use other menus and/or preference settings. If your browser does not support Automatic Proxy Configuration then you will have to enter the necessary information manually. Every web browser program is different so we cannot give exact instructions here. Instead you should read your

browser's documentation or built-in help to learn how to set the proxy server settings to:

```
Host wwwcache.york.ac.uk
Port: 8080
No proxy for: york.ac.uk
```

This means "Use the proxy service running on machine 'wwwcache.york.ac.uk' at port '8080' except for web servers whose names end 'york.ac.uk' (in which case link to them directly)."

Note that some web browsers may need a "No proxy for" setting of "*.york.ac.uk" to be used instead; check your browser's help for details.

If your browser lets you set proxies separately for the various protocols – http, https, ftp, gopher – then each should be set to use the above.

Usage Statistics

Some months ago the software which provides the YorkWeb service had to be moved from its old computer to a new server. This new computer runs a different operating system, which meant that much of the software had to be recompiled and reconfigured.

Whilst these changes were going on the production of YorkWeb's Usage Statistics reports was suspended. The last of the changes have now been completed and the Usage Statistics reports are again being generated.

As before they can be found on YorkWeb at:

<http://www.york.ac.uk/ServerSupport/UsageStats/>

Because YorkWeb continues to grow in size it has been necessary to stop generating each report every night: they simply take too long to produce! The analysis software has been altered to generate reports until a particular time is reached, at which point it will stop. When the software next runs (the following night) it will pick up where it left off.

Thus when you look at a Usage Statistics report you should check the period it covers. This is shown at the very top of the report.

Plans for Personal Web Areas

Discussion is taking place elsewhere in the University on the thorny issue of liability for content provided through the Web, the need for and wording of disclaimers, etc.

To help people distinguish more easily between information provided through official YorkWeb Information Providers (ie, those people using Web Accounts) and that provided in a personal capacity we are considering migrating Personal Web Areas onto a new "virtual server."

The effect of this would be to change the URLs of Personal Web Areas from:

<http://www.york.ac.uk/~ozw1/>

to, say (the name of the proposed server hasn't yet been finalised):

<http://www-users.york.ac.uk/~ozw1/>

If this plan goes ahead we will set up the main web server to automatically redirect requests for Personal Web Area items to the new server for several months. This will help people looking for your Personal Web Area during the transition period.

Information about any changes will be announced here and through Login News when a decision has been taken.

ALPHA computers – update

Kay Robinson

The new Alpha computers are continuing to deliver good performance in comparison to the old ADVAX computers. During the summer vacation we will be implementing some further hardware upgrades which will lead to additional speed when reading from and writing to disk storage. Disruption to the service will be kept to a minimum – watch out for login messages advising of system availability.

Daytime batch processing is now being seriously considered as a further improvement to the MAC system. Users will know that many reports and programs have not been run during the day in the past because of the effect that the batch queue processing has had on interactive sessions. At this stage, MIS wish to find out from all MAC users which of their routine processing and reports would benefit from daytime running. For example, one suggestion that we have received from Stores managers is for the stock exceptions report to be available for daytime running so that stock taking can take place in one day rather than two. All suggestions are welcome – particularly from Departmental Secretaries – please email them to *infodesk* marked for the attention of the MIS group.

Due to the improvement in system performance, the windows of opportunity for running batch programs have increased, particularly on weekday nights. An outline of the batch queue availability is given on the right:



In brief....

DWH Training

Further introductory courses on Student, Finance and Estates data are scheduled for the autumn term – the schedule can be obtained from the Information Desk. In the meantime, copies of the course notes can be obtained from Michael Evans (Finance), Caroline Hall (Students), or Janet Hodgson (Estates).

MIS Advisory

We are not able to hold any further Advisory sessions in Heslington Hall until the end of November because the H/B40 training room is being used by the Registrar's department for Student Registration. For advice or support, please raise a log with the Information Desk and we will be happy to assist at any time.

Impromptu and Powerplay

Training courses for these products were carried out during June and July. Additional courses are scheduled for December and more will be held next year. For further information or a copy of the course notes please email *infodesk*. We are planning to include detailed articles on these products in the next issue of *Keynotes*.

DWH Passwords

If you have forgotten your data warehouse password or you would like a new one, please contact the Information Desk.

| | | |
|----------------------|-------------|--|
| Monday-Friday | 00:00-02:30 | Full system backup (except Monday am) |
| | 02:30-08:30 | Batch queues open |
| | 08:30-17:30 | No batch processing, priority to interactive use |
| | 17:30-21:00 | Data Warehouse build (except Friday pm) |
| | 17:30-24:00 | Batch queues open |
| Saturday | 00:00-02:30 | Full system backup |
| | 02:30-24:00 | Batch queues open |
| | 18:00-21:00 | File optimisation programs run |
| Sunday | 00:00-24:00 | Batch queues open |
| | 12:30-15:30 | Data Warehouse build |

As a general rule, do not submit a job to run at a particular time. By not specifying a time the job will run when the queue is next open which leaves plenty of time if you particularly want something for the next working day.

Instructions on how to connect and log on to the new Alpha computers for those users who have not yet had to use the new hardware can be found on YorkWeb at: <http://www.york.ac.uk/services/cserv/admin/alpweb1.htm>.

Java on the Campus Network

John Illingworth

Inprise (née Borland) Jbuilder Professional is available on the Windows 95 system. Many PCs are a bit underpowered for this industrial strength applications development environment. For anyone wishing to utilise a lighter-weight version on their own networks for teaching purposes, we have JBuilder University Edition on CDROM. This can be freely distributed around the campus.

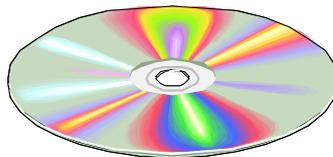
Teaching Software on Campus PCs

– last chance to move to Windows 95 before academic year 98/99

John Illingworth

During the last year we have been moving much of the teaching software from Windows 3.11 to Windows 95, acquiring new versions where possible and publicising the need for this move at frequent intervals.

With the move to exclusively Windows 95 PCs in classrooms from 25 September 1998 it will not be possible for most undergraduates to use Windows 3.11 at all, so it is vital that all those lecturers running courses involving the use of centrally-supported PCs check that their teaching software and data has been moved.



Move to Microsoft Office

– reassurance for Paradox users

John Illingworth

The move to MS Office involves the standard package only, that is Word, Excel and Powerpoint. Any change from Paradox to Access or anything else is **not** part of this exercise and will be considered later as an entirely separate project. We are aware of the considerable effort invested in Paradox reports, queries, and scripts and have no immediate plans to abandon Paradox. Indeed, recent licensing deals may make it possible to upgrade to Paradox 8 during the next year.

National Services

John Robinson

York users can be registered to use JISC funded computer services at Manchester Computing. MIDAS is a database service which holds many government, economic and social studies databases. Kilburn is a high performance multi-processor system for compute intensive tasks.

Contact John Robinson (*jsr1, 3833*) or see <http://midas.ac.uk> or <http://www.mcc.ac.uk/hpc/> for details.

Staff and Graduate IT Training Courses

John Illingworth

Registration Fee

The University has instructed the Computing Service to charge a £10 registration fee for all courses. This will be required at booking time, and we would expect that it would normally be in the form of a departmental Goods Demand and Charge Note, although we can accept cash, cheques or University smart card.

This impost does not affect our ability to take bookings through the internal mail or in person but it makes telephone and email bookings no longer possible.

Note that only IT training is affected. All the staff training organised by the Staff Development Office is free.

Facts & Figures...

... about the 1997/98 Computing Service staff and graduate training courses:

| | |
|---|-----|
| Number of courses scheduled: | 81 |
| Number of people registered: | 812 |
| Number of different course titles: | 39 |
| Number of courses cancelled through lack of participants: | 10 |

Computing Service Address

Computing Service
University of York
Heslington
YORK YO10 5DD

Telephone: Switchboard (01904) 430000
Direct dialling (01904) 43 followed by ext no.
Fax: (01904) 433740
Email: *username@york.ac.uk*

Also, try the World-Wide Web: <http://www.york.ac.uk/services/cserv/>

Information Desk

Telephone: ext 3838
Email: *infodesk*

The Information Desk is open from 9am to 5.15pm Monday to Thursday and 9am to 4.15pm Friday (*closed for training Wednesdays 2pm-3pm*), for problem solving (staff and graduates), 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 | <i>kmj1</i> |
| Deputy Director: | Peter Roberts | 3802 | <i>pdr1</i> |
| Departmental Secretary: | Lorraine Moor | 3801 | <i>lsm1</i> |
| Head of Technical Services: | Dave Atkin | 3804 | <i>dla1</i> |
| Head of User Services: | John Illingworth | 3803 | <i>jj1</i> |
| Head of Personal Systems: | Doug Moncur | 3815 | <i>dgm1</i> |
| Operations Manager: | Brian Souter | 3814 | <i>bs1</i> |

| | | | | | |
|--------------------|------|--------------|------------------|------|--------------|
| Steve Bennett | 3832 | <i>sgb8</i> | Jenny Jackson | 4455 | <i>jj5</i> |
| Sue Bolton | 2102 | <i>sjb28</i> | Chris Joy | 3807 | <i>cj8</i> |
| Mike Brudenell | 3811 | <i>pmb1</i> | Bob Marriott | 4454 | <i>bdm2</i> |
| John Byrne | 3812 | <i>jcb1</i> | John Marsden | 3832 | <i>jpm1</i> |
| Paul Conacher | 4346 | <i>pac1</i> | John Mason | 3813 | <i>jrm13</i> |
| Mark Cook | 3897 | <i>rmc12</i> | Darren Munday | 3821 | <i>dam6</i> |
| Robert Demaine | 3808 | <i>rld1</i> | Helen Parker | 3800 | <i>hp7</i> |
| Debra Fayter | 3839 | <i>daf3</i> | Colin Rea | 3817 | <i>cr9</i> |
| Ken Finch | 4452 | <i>kf1</i> | John Robinson | 3833 | <i>jsr1</i> |
| Rob Fletcher | 3816 | <i>rpf1</i> | Kay Robinson | 2101 | <i>kr7</i> |
| Kevin Gardner | 3739 | <i>pkg4</i> | Andrew Smith | 3809 | <i>abs4</i> |
| Chris Gowland | 3823 | <i>cg1</i> | James Walker | 4347 | <i>jaw1</i> |
| Peter Halls | 3806 | <i>pjh1</i> | Timothy Willson | 2123 | <i>ftmw1</i> |
| Vivienne Hemingway | 3818 | <i>vwh1</i> | Michael Woodhead | 3825 | <i>mw28</i> |
| Sue Hodges | 3800 | <i>sh32</i> | | | |

Get Keynotes

If you wish to receive *Keynotes* by post simply complete this cut-away slip and return to

The Secretary
Computing Service
University of York
Heslington, York YO10 5DD

Name _____
Address _____

Please send me *Keynotes*.

I've changed my address.

Please remove my name from the mailing list.



I want Keynotes.