

The logo for the DICE newsletter. It features a red circle above a blue square containing the word "dice" in white lowercase letters. To the right of this is the word "NEWSLETTER" in large, bold, blue, outlined uppercase letters.

## Autumn 2008

Welcome to the autumn edition of the DICE newsletter – and the first newsletter from the award-winning Informatics Forum! In this issue you will find articles on printing, protecting web pages, backups & file recovery, and much, much more...

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### Forum Move Summary

With the move to the Forum now complete, thanks are due to the computing and technical staff for all their hard work - the computing aspect of the move to the Forum progressed as smoothly as one could have expected, particularly given the fact that normal user service continued to be provided during the migration period.

Even before anybody moved into the building, preparation work by the computing and technical staff included wiring-up 600 desks, installing around 120 network switches in 16 IT closets and wiring-up, configuring and documenting over 3000 active data ports.

Our figures show that the computing staff alone expended over 90 person weeks on migration-related work during the period January to October. As expected, this has seriously hampered progress on development projects.

There is still much to be done. Continuing problems with the air-conditioning in the Forum server room have delayed the move of servers from the server rooms at our former sites. The wireless service, the audiovisual equipment, and the display screens have still to be fully deployed.

As you may expect, we have UPS provision for the Forum server room to cope with short duration power outages - but we also have UPS provision for the offices (floor boxes only). With our current load (around 90kW) this *should* provide us with over 2 hours of power if the mains supply to the building fails.

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*Head of Computing*

### Staffmail Update

By the time this edition of the newsletter is published, the transfer of staff mail accounts from the Informatics mail server should be complete, with mail sent to @inf addresses being forwarded to the relevant staffmail account, forwarded to an external email account, or bounced (if we have not been told of a suitable forwarding address). The only exception to this is mail sent to shared mail boxes which, for the moment at least, are still being stored on the Informatics mail server. Those users who did not copy across their mail folders to staffmail before the switch should find that their Informatics mail folders have now been copied across to a sub-directory of their staffmail account called inf-mail-folders. Our thanks to the IS infrastructure services team, and in particular Graeme Wood, for making this happen.

Some users have complained that they cannot see these copied folders on staffmail. This is because certain mail clients (including Thunderbird and the staffmail web interface) require the user to re-subscribe to these folders once they have been copied across. How to re-subscribe varies from client to client. Informatics support staff should be able to assist with this for all the supported mail clients.

There are currently no plans to phase out @inf addresses, and using staffmail does not mean that you need to change your "From:" address, especially as some users have commented that this can cause problems with sending email to mailing lists. Unfortunately, when reconfiguring some mail clients to use staffmail, they also assume that you wish to change your "From:" address. If this is the case with your client, you can find instructions on how to change it back at:

<http://www.inf.ed.ac.uk/systems/email/settingfrom.html>

As ever, if you have any questions about the move to staffmail, please contact the User Support Unit via the support form in the first instance.

**Craig Strachan** <[cms@inf.ed.ac.uk](mailto:cms@inf.ed.ac.uk)>  
*Services Unit*

## Printing from Macs

A frequently-asked support question is how to make use of Informatics printers from a self-managed Apple computer. This can be done in numerous ways, but with DICE CUPS support still at an experimental stage, the most reliable and only recommended method is through the Informatics Samba (SMB, Windows connectivity) server.

Setting up a printer in this way is more complex than it should be due to bugs in the Mac/Windows interface; specifically, the Mac OS keychain can be used to authenticate with our SMB server, but not when printing. Adding a printer therefore requires a few obscure configuration steps to work around this. However, the instructions are reasonably straightforward, and can be found at:

<http://wiki.inf.ed.ac.uk/DICE/DiceMac#SmbPrinting>

These allow the connection of a Mac OS X (10.3-10.5) computer to any of the printers in Appleton Tower or the Informatics Forum. The

above page also provides the Mac driver for Canon 'MFD' printers in the Forum, allowing duplex printing and other advanced features.

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*Research & Teaching Unit*

## Protecting Web Pages with Cosign

Cosign, a single sign-on mechanism developed by the University of Michigan, is used to provide a secure web authentication system for Informatics users. It replaces the kx509 authentication mechanism, and uses cookies – so it will be compatible with all browsers that support cookies (which is almost all). It is essentially a reliable way of confirming a user's identity and allowing access to restricted pages without repeated re-authentication.

Cosign has been running on some Informatics (.inf.ed.ac.uk) sites for a while, and access methods on [www.inf.ed.ac.uk](http://www.inf.ed.ac.uk) are currently being converted to use Cosign (it's already in use for EASE).

In addition, the Cosign 'friend' system allows non-Informatics users to authenticate using self-created, centrally-administered guest accounts (it has local modifications to use the kerberos database for authentication).

The web server checks with a central Cosign server to verify that the user is authenticated before allowing access to the resource.

Cosign also allows access constraints to be imposed once a user is authenticated. For example, it may only allow people who have been authenticated and who are members of staff to have access. When the session is finished, users can log out of all protected services by visiting a single URL (very important when being used from Internet cafés and other public areas, for example).

When connecting to a web service, users of DICE machines are automatically re-directed to the Cosign login page (although only for DICE users using Firefox). Since the user has already logged in via DICE, the Cosign service accepts the kerberos credentials assigned at login time and re-directs the user back to the requested web service with Cosign credentials. When browsing to a secure (HTTPS) page, this process would be transparent to the user, and they would appear to connect straight to the

web service. If using an insecure (HTTP) URL, the current behaviour is to redirect to a "Not Authenticated" page and thence to the Cosign login page (for web pages under www.inf.ed.ac.uk).

When Informatics users connect from a non-DICE machine, they are also automatically re-directed to the Cosign login page. However, since they don't yet have DICE kerberos credentials, the Cosign login page prompts them to login with their DICE username and password - which authenticates against kerberos - and they will acquire Cosign credentials in the process. The user is then automatically re-directed back to the requested web service with these Cosign credentials.

Non-Informatics users can register via the iFriend mechanism, which uses an external email address as the ID, at::

<https://ifriend.inf.ed.ac.uk/friend/>

The user is then directed to the Informatics iFriend web page to create the account password, and can then use their ID and password to login via the Cosign login page - they then have access to the restricted pages.

As noted above, it is recommended that web publishers use the HTTPS form of the URL when referring to a restricted page. This not only makes it plain that a secure connection is being used, but also obviates the need for the web server to re-direct from HTTP to HTTPS.

**Roger Burroughes** <[roger@inf.ed.ac.uk](mailto:roger@inf.ed.ac.uk)>  
*User Support Unit*

## Audio-Visual facilities

As many of you will be aware, the Forum's audio-visual facilities are still not fully operational, with some items still to be completed by the contractor. Please bear with us while we continue to work on these.

The "Meetings Room Committee" are reviewing various aspects of how the meeting rooms should operate, and AV is one of those aspects. You can leave suggestions for this group on the wiki page:

<https://wiki.inf.ed.ac.uk/Vademecum/SuggestionForMeetingRooms>

A fuller article on the audio-visual facilities will appear in a future newsletter.

On a practical note, please do **not** move the audio-visual cabinet – any movement is likely to damage the AV, power, or data cabling.

It is also useful to remind users of the computing facilities provided by each AV cabinet... Currently there should be a DICE machine inside each cabinet (which is normally kept locked), and consequently user & networked files - as well as presentation and all other applications normally available on a DICE desktop machine - can be accessed if required. Access to this machine is via the attached keyboard and mouse, with USB sockets available on the cabinet lectern and the display is via the projector & screen. Note that AV cabinets on the ground floor do *not* currently contain DICE machines.

Please do **not** shutdown the machine at the end of your session, as it cannot be rebooted without access to the (usually locked) AV cabinet. Note that, although the machines in AV cabinets are currently DICE machines, this provision is currently being discussed by the Meeting Group committee, and may change.

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*Head of Computing*

## New Backup System (TiBS)

For some time now, the School has been in the somewhat unfortunate position of running no less than three separate backup systems in parallel, one for NFS file systems, one for AFS file systems, and one for machines running Windows and Mac OS. This situation is obviously highly undesirable - not least because of the demands made by each system on computing staff resources at a time when such resources are becoming ever rarer. In addition, all three systems are running near the limits of their capacity, a particular problem in the case of PC and Mac backups where many of our users who do not currently make use of this facility would like to do so.

One problem we faced in selecting new backup software to meet all of our needs is that very few backup solutions offer native support for AFS file systems, and most of those which do support AFS are lacking in some other respect - such as support for Windows or Mac OS. Fortunately, there is one backup solution out there which seems to be a very good fit for our requirements, the True Incremental Backup

System (TiBS) from Teradactyl. As well as support for all our file systems, TiBS offers the facility to synthetically create new level 0 backups from existing level 0 and incremental backup data, rather than recopying all the data from a file server every time a level 0 backup is required. This results in a major saving in the time taken and network bandwidth used when carrying out backups.

Backup software is of little use without somewhere to store the backed-up data. Though many sites are now doing much of their backups to disk, an analysis of the School's backup needs suggests that in our case, backup to tape still makes more sense for data more than a few days old. Our existing 8-slot single LTO2 jukebox is no longer able to cope with the demands we are placing on it and so we have acquired a Sun L180 tape library from ECDF for use with TiBS. This library contains 180 tape slots and 4 LTO2 drives and should meet our needs for the foreseeable future.

We are now in the initial stages of deploying TiBS and the L180 within the school. At the moment, we are concentrating on AFS and NFS file systems but we hope to make an announcement regarding PC and Mac backups early in the new year.

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*Services Unit*

## User file recovery...

...and on a related note, it may be useful to remind users of the local file recovery mechanism, which is available from the directory `~user/Yesterday` (for AFS users), or `/yesterday/home/user` (for NFS users) – and note the differing case of “Y” and “y”! These locations are mirrors of the user's home directory and are created daily (in the early hours of each morning).

Files in the above locations can be restored **by the user** to their original location if the file is accidentally deleted and noticed **before** the early-morning update. Files deleted from the user's home directory are also deleted from the mirror location (it's a mirror, after all), so you have to notice and restore your deleted file before this happens.

To restore a file, simply use the “`cp -p <yesterday> <location>`” command to make a

copy of the file from the appropriate *yesterday* directory in the original (or any other) *location*. Note that, when using `cp`, the date & time properties of the original file will *not* be preserved in the restored copy unless the “-p” flag is used.

**Roger Burroughes** <[roger@inf.ed.ac.uk](mailto:roger@inf.ed.ac.uk)>  
*User Support Unit*

## New Printing System (CUPS)

DICE has traditionally made use of the LPRng printing system. LPRng has not been maintained or developed for some time now and in most Linux distributions, including Scientific Linux which forms the basis of DICE, has been supplanted by CUPS, the Common Unix Printing System. Until now, we have been reluctant to move away from LPRng, despite the increasing cost of porting it to each new OS release we deploy, as we have made substantial local enhancements to the system, mostly accessed via `-Z` flag options which we believe our users would wish to retain.

An increasing number of applications such as Open Office no longer support printing via LPRng, and because of this we have been forced to run the LPRng and CUPS printing systems in parallel on DICE desktops. Unfortunately this has caused problems with other applications (Acroread is probably the most obvious example for most users) and so the decision has been taken to discontinue the use of LPRng within DICE with effect from the 11<sup>th</sup> December 2008.

What does this mean for you, the user? Hopefully any differences you notice will be positive ones. You will no longer need to use clunky workarounds to print from Acroread, and the list of printers in Open Office should be simpler to understand. The current print commands such as `lpr` and `lpq` will continue to be available within the shell and most (though not all) `-Z` flags will work as before. Documentation on any differences you may encounter will be available in the Computing Support area of the School website.

**Craig Strachan** <[cms@inf.ed.ac.uk](mailto:cms@inf.ed.ac.uk)>  
*Services Unit*

## User Support in the Forum

After an extremely busy summer, we are now settled in the Forum and things are at last beginning to get back to normal. There are two support areas in the Forum - in 2.07 and 4.08 - which many of you have visited already! We man the support areas on a rota basis so you won't always see the same person. Our front line team consists of:

Ross Armstrong	(formerly BP)
Richard Bell	(formerly JCMB)
Lindsey Brown	(formerly JCMB)
Carol Dow	(formerly JCMB)
Ewan Grant	(formerly FH/AT)
Jennifer Oxley	(formerly FH/AT)

Where possible, please use the support form to report queries. This way we build up a record of issues which helps us to deal with similar problems in the future and helps us to schedule and prioritise our work fairly. It also means that you can monitor progress. We appreciate that this method is not always suitable so you can also phone us on x504666 or x504503. Our contact details can also be found at:

<http://www.inf.ed.ac.uk/systems/>

You are also welcome to pop in to the support areas. We'll try to answer your query straight away but if we are very busy or your request is not urgent, we may ask you to submit a support ticket.

Note that we now have two "kiosk" machines available for web and mail access (one is "brodie" in the Level 4 Visitor area, the other is "strathkinnes" in the Level 2 Visitor area). It is intended that these will be used by short-term (drop-in) visitors who do **not** have a visitor account, as available facilities will be very limited. This is not intended to replace the use of visitor accounts – which should continue to be requested for anyone visiting for a longer term - this process is described on:

<http://www.inf.ed.ac.uk/admin/policy/visitors.html>

We hope that you are satisfied with the service that we provide but would like to hear from you if you have a suggestion that you feel would help us to improve this service.

**Alison Downie** <[alisond@inf.ed.ac.uk](mailto:alisond@inf.ed.ac.uk)>  
*User Support Unit*

## Computing Development Projects

The technologies underpinning the supported computing environment within Informatics require constant renewal and development. Any significant development work (10 working days or more in duration) is classed as a development project. The computing staff time devoted to these development projects totals to between 4 and 4.5 FTE on average.

A lightweight mechanism for tracking these development projects was devised in June 2006: the projects would be described in a standard format and managed through a monthly meeting. Over the following months a development project database to hold the descriptions of the projects and a web interface were created. Projects are described and recorded in this database which can be accessed via a web interface:

<https://devproj.inf.ed.ac.uk/>

and are managed through the Project Development Meeting:

<https://wiki.inf.ed.ac.uk/DICE/DevelopmentMeeting>

held on the first Wednesday of each month. The remit of the meeting is to monitor, assess and prioritize all computing development projects from initial proposal to operational signoff. All significant new computing developments must be proposed to the development meeting and undergo peer review.

On the development project web interface there are links to the list of proposed, current and completed projects. Project records are displayed if one follows the link from the numerical project identifier (the first column of each project line in one of the above lists). Each project record contains, amongst other things, the title, leader, description, milestones and deliverables of the project.

If you are particularly interested in any of these projects you can get further details by contacting the relevant project leader.

**Ken Dawson** <[ktd@inf.ed.ac.uk](mailto:ktd@inf.ed.ac.uk)>  
*User Support Unit*

## Computing Update

For many years we have purchased desktop PCs in small form factor cases. These were particularly suited to the type of office furniture we had in our previous buildings. With the move to the Forum, it now seems like a good time to look at whether we should be purchasing our desktops in a different form factor case (small or large pizza-style, tower, etc) or indeed whether we should be buying a mix of cases. Please let us know your views (comments to the author)...

The School has recently purchased a server with 64Gb of main memory and 16 processor cores. This is intended specifically for use by research applications which require either large amounts of memory or a significant number of SMP cores. If you are interested in making use of this machine, please raise a support ticket.

**Alastair Scobie** <[ascobie@inf.ed.ac.uk](mailto:ascobie@inf.ed.ac.uk)>  
*Managed Platform Unit*

## Departing staff

After many years of sterling service in the University, the following computing staff have opted to "take early retirement". Their contributions will be sorely missed.

### Rosemary Soutar

Rosemary joined the old Computer Science Department in 1987 (having worked in AI from 1973-1977, and ERCC from 1978-1987). Rosemary's primary focus for the last ten years has been supporting the School Database for the ITO, IGS, Institutes, report series and RAE exercises, and before that she supported the old Computer Science QI database system. In the last few years Rosemary managed practically all the regular maintenance, support requests and development work associated with the School Database as well as the online coursework submission system.

### Archie Howitt

Archie joined Computer Science in 1985 having worked in the ERCC (now IS) for many years. Archie's primary focus was on supporting the hardware orientated aspects of our teaching

syllabus. He co-founded the computer science hardware project (for CS4 and MSc students) and provided the computing infrastructure for the third year computer design and system design exercises. He has supervised many final year projects (largely hardware related) over the years.

### Ken Dawson

Ken Dawson, who is retiring at the end of this year, is one of the longest-serving members of the computing staff having joined the then Department of Artificial Intelligence in 1983 as one of its first computing officers after an earlier career as a maths teacher in the Rudolf Steiner school. Ken swiftly became the Department of AI's senior computing officer and was responsible for managing the computing facilities at the Department's Forrest Hill and South Bridge sites. With the formation of the Division of Informatics in 1998, Ken took on responsibility for managing the User Support aspects of the computing service as well as managing and maintaining the School database. In the most recent computing reorganisation, he became Deputy Head of Computing and manager of the User Support Unit.

Ken has a keen interest in outdoor activities and retirement will hopefully give him plenty of opportunity to work in his beloved allotment.

### Bill Hewitt

Bill Hewitt joined the Computing Support Team of Cognitive Science/HCRC at Buccleuch Place in June 1992 - having been previously employed at the Rutherford Appleton Laboratories - and was soon happily ensconced with other CSTers, providing support at all levels.

A keen cricketer, Bill started an informal Informatics Cricket XI from the ashes of the old Computer Science team, and the new team takes on all-comers during the summer months. Bill also has a taste for real ale, fine wine and malt whiskies - having run tasting sessions whilst in CogSci/HCRC - and is always happy to pass on drinking notes to those interested!

For a number of years, Bill has been maintaining that he will be leaving "next year", and so whether he actually goes **this** time remains to be seen!