dice NEWSLETTER

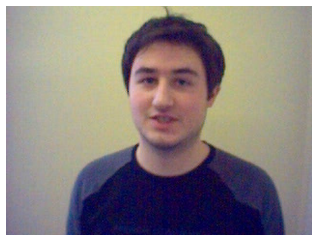School of Informatics, University of Edinburgh   Issue 3

Contents

▶ Support in Buccleuch Place

We welcome Ross Armstrong, who joined us in December as a new Computing Support Officer. Ross is based in Buccleuch Place for four days each week.

Ross graduated from Aberdeen University where he studied Computer Science and Artificial Intelligence.

▶ How the Support Form Works

The support form[1] sends your request to "Request Tracker"(RT) where a ticket is created in the support queue. The CSOs check the queue regularly and answer the majority of requests. For more specialised requests (e.g. a request for teaching software), the ticket will be moved to a more appropriate, specialised queue and will be allocated appropriately by the CO responsible for that queue. There are currently 26 such queues!

When you send an initial request, you will receive an e-mail from RT acknowledging receipt. If you do not receive this, then there may be a problem so you should

_____

[1]www.inf.ed.ac.uk/systems/support /form/

contact your local support office. If your mail is moved to another queue, you will also receive an e-mail detailing which queue your ticket has been moved to. You will also receive an e-mail when one of the CO/CSO staff take ownership of the ticket.

You can, of course, reply to any of these e-mails if you require an update or if you have further information to give us to help solve your problem. To give you an idea of the volume of requests that we receive, here are some statistics for the past few months:

	November		December	
	All queues	**Support**	All queues	**Support**
Total	761	**343**	479	**188**
Resolved	579	**315**	297	**172**
Open/New	65	**26**	41	**16**
Stalled	7	**1**	3	**0**

How can I view my own tickets?

At https://rt3.inf.ed.ac.uk staff can now view RT tickets that they have submitted. You have always had the ability to reply to the e-mails that the RT system sends you but you can now monitor the progress of your tickets on-line. There are a couple of points to bear in mind:

1. If you have entered tickets in the past using more than one e-mail address, then RT will have created more than one RT account for you. You will only be able to see tickets that have been entered using your DICE username and Informatics e-mail address. When you access the RT website, it uses KX509 authentication to check that you are a valid DICE user and hence will not show you any tickets that you may have entered using an alternative account.

2. You will only be able to see tickets from the date that rt3 went live - 29th September 2004.

This does not prevent you from entering requests from the _non-authenticated_ form. This is quite often used when people are working from home, for example. It just means that you won't be able to see the progress of these tickets. You will be able to reply to the e-mails as normal. For more details please see:

http://www.inf.ed.ac.uk/systems/support/rtuseraccess.pdf

Alison Downie <alisond@inf.ed.ac.uk>

▶ Wireless and VPN News

The decommissioning of the "informatics" wireless pilot service went smoothly on December 15th, and all our access points are now running on the University-wide "central" service. http://www.inf.ed.ac.uk/systems/network/Wireless.html contains instructions and links to further information.

The network team is now investigating how wireless coverage may be improved at our four sites. Forrest Hill, in particular, is likely to prove awkward to cover reasonably completely, due to the nature of the building, and we will therefore be conducting some experiments there first before attempting to install the access points in anything like their final locations. Meanwhile, if you are aware of coverage holes at AT, BP and KB which you haven't already discussed with the network team, we would be pleased to hear from you.

The OpenVPN system which we have set up for DICE managed laptops has also proved effective for "DIY-DICE" machines. However, we are aware that Windows and Mac users find their built-in PPTP mechanism rather easier to set up, and we are therefore researching the possibility of providing an Informatics PPTP endpoint as an alternative to the central EUCS-run VPN gateway for these machines. Initial investigations suggest that this may now be somewhat easier to achieve than in the past, when kernel patches and firewalling issues proved problematic, though there are some serious security concerns which may ultimately rule PPTP out. Look out for progress reports in future newsletters!

George Ross <gdmr@inf.ed.ac.uk>

▶ Dialup on DICE laptops

With the increasing availability of broadband and wireless, mainstream use of dialup connections is diminishing. However, it is still an important laptop facility for those who travel frequently – whether to to send a quick email from the airport, using a Bluetooth connection to a mobile phone, or as a more sustained connection in a hotel room which does not provide a faster connection.

Under Redhat 7, the recommended DICE dialup program was `EzPPP` which was a heavily-modified GUI interface to the PPP dialup system. Under Redhat 9, the GUI toolkit on which EzPPP was based became obsolete, and we decided to replace it with alternative approach to dialup connections that relies on more standard code (`wvdial`) and integrates more closely with the configuration of other network types, such as LAN and wireless.

A basic dialup connection can now be established simply by typing:

```
dial -v
```

You will be prompted for details, such as the phone number, username, and password. To terminate the connection, type:

```
hangup
```

Remember to disconnect explicitly, because the connection will remain established even after logout (a deliberate new feature)!

The standard DICE "network scheme editor" `nse`, has been extended to include information on dialup connections, so that dialup details can be entered in the same way as details for any other type of connection. Once the connection is established, all the associated configuration changes are implemented in exactly the same way for all networks types, providing a uniform interface.

If you want to store information about a particular dialup configuration, or you want to explicitly specify values for certain configuration parameters, then you can use `nse` to create a new scheme. The dial command can be instructed to use that scheme, simply by providing the scheme name on the command line:

```
dial -v <my-scheme>
```

Note that if you choose to store any passwords in the scheme, they will (currently) be stored as plaintext in you local scheme file. Important passwords should therefore be left blank in which case the dial command will prompt for them.

By the time of publication, full details the dialup process should be available in a new document which describes how to connect to different networks using all the various technologies: http://www.lcfg.org/doc/netguide.pdf

EzPPP did contain a number of features which are not available under the new process, and we would like to know if any of these are still considered important.

Paul Anderson <dcspaul@inf.ed.ac.uk>

➤ Web Service Authentication with KX509

KX509 is a mechanism developed at the University of Michigan. We use it here so that an X.509 certificate can be automatically acquired for you from your Kerberos credentials. An X.509 certificate is like a digital ID card and a web browser can use the certificate to authenticate you for web based services. The X.509 certificate is temporary and has the same lifespan as your Kerberos credentials. Your X.509 certificate is automatically renewed whenever you renew your Kerberos credentials using the "renc" command or a supported screensaver.

When you login to a DICE machine you will automatically get an X.509 certificate which is then made available in Mozilla/Firefox through a browser plugin (part of our default environment). When you are using a non-DICE machine (WindowsXP or self-managed for example) and when you are using a machine outside of the Informatics infrastructure (a PC at home or at an Internet Cafe for example) you can still acquire an X.509 certificate by going through our Authentication Portal (where you enter your normal DICE account username and password). Most of our X.509 authenticated web services will bounce you to the Authentication Portal automatically if you do not have a valid X.509 certificate anyway.

We currently use KX509 to provide automated authentication for the following web services:

- ❏ Bugzilla: the bug-tracking system used by computing staff

- ❏ RT: the request tracking system used by computing support staff and also in addition now allowing any staff to track their own requests (see RT article in this newsletter)

- ❏ The user support form uses information provided by X.509 to automatically fill out your username

- ❏ OpenVPN: provides remote access to resources normally only available from inside the Informatics network

- ❏ WebSubmit: the new student practical submission system

- ❏ Shezhu: Room/Resource booking system used at FH and BP

- ❏ WebDAV: trial service, specifically for remote/shared calendaring with Mozilla

- ❏ Access to group protected web pages on www.inf.ed.ac.uk: actually we don't use KX509

for this yet, but the principle has been proven so expect this real soon now ...

When we integrate external web services or develop our own new web services we always try to consider the ease with which they can be adapted to leverage our KX509 authentication mechanism. The list above is likely to grow as we start to use more web services and more of those services support X.509 authentication.

If you normally use a DICE machine you probably don't even notice the complex processes that happen in the background to allow you to use any of the above services without any further authentication step. Things are unfortunately not quite so smooth when going through the Authentication Portal. This is largely because the system is very browser/version sensitive, see the Authentication Portal User Guide http://www.inf.ed.ac.uk/systems/authportal for more detailed information on how to use the Authentication Portal (particularly from Internet Explorer).

Another aspect to be aware of when using the Authentication Portal is that the acquired X.509 certificate is held in the browser until it expires. This is of most concern when accessing our services from an Internet Cafe for example, where, unless they do the right thing, it means that anyone using the machine after you will have access to your own identity (until the certificate expires). There is no real solution to this problem other than by making it as simple as possible to destroy your own certificate. In this situation you should at the moment use the browsers builtin certificate management tools to explicitly remove your X.509 certificate before leaving.

The University as a whole is moving to a single sign-on system called EASE which also uses Kerberos (via a mechanism called Cosign, which is like KX509 and is also developed at the University of Michigan). EASE is a cookie based authentication, which while not quite as secure as KX509 is considerably more browser portable. We are currently reviewing what the advantages and disadvantages of integrating our system with the University system would be.

Tim Colles <timc@inf.ed.ac.uk>
Authentication and Authorization Team

➤ Backup Team News

Backups are a subject which tends to be of little importance to the average user until a disk dies or an unfortunate slip of the fingers consigns that vital file to an untimely oblivion, whereupon the availablity of the lost files and their currency suddenly becomes of consuming interest! This short article outlines the backup procedures currently being followed within Informatics.

By far the best way of ensuring that your data is backed up regularly and reliably is to store it on one of the School's 6 main fileservers, either within your home directory or in other filespace allocated to you by the file services team. With very few exceptions, all user data on the school fileservers is incrementally backed up directly to tape daily and has a full backup to tape every 6 weeks or so. The incremental tapes are recycled every 6 months and the full tapes every year with the exception of the September tapes which are not recycled.

In addition to being backed up to tape, all user data is also mirrored to a machine on a remote site nightly. If your username is 'fred', you can find the mirror copy of your home directory in /yesterday/home/fred on any DICE machine.

Things are slightly different for DTC students. Any DTC student who would like to access the mirror copy of their home directory should contact support for details.

It is appreciated that for reasons of efficiency and performance, some users may need to store information on the local disks of their DICE workstations, non-DICE desktop machines and laptops. This data is NOT BACKED UP and it is the responsibility of the user to make sure that this data is regularly copied back to their Informatics home directory for backing up.

Possible ways of doing this include rsync and scp for Unix users and Samba for Windows and Mac users. Support can help with any queries users may have regarding how to go about this.

In the special case of laptops which may be connected to the network extremely infrequently, we can use a program called Retrospect to directly backup Windows machines and Macs. It is possible that we may be able to extend this service to Linux based machines in the future.

For more details about how Retrospect backups work, see: http://www.inf.ed.ac.uk/systems/backups

It is perhaps worth pointing out that events of just over two years ago demonstrated that data archived to a writable CD or similar and then stored in the drawer of the desk the machine is sitting on may be of little use in the event of a catastrophe any greater than a disk failure.

Backing up research data may pose its own problems, due mainly to the large amounts of data which may be involved. At present most research data is backed up as part of the normal backups but this may change in the near future. Researchers who would like to discuss their backup needs are welcome to get in touch with myself.

Within Informatics, backups are mainly performed as part of the School's disaster recovery strategy rather than as an archiving service to the user. Although the backups team will make every effort to recover lost or misplaced data for users, the time consuming nature of this task coupled with other demands on our time means that it may take anything up to a week to recover lost data from backups.

Craig Strachan <cms@inf.ed.ac.uk>

Backups Team Leader

➤ DIY DICE

The last newsletter described a proposal [2] for "lightweight"DICE machines which was developed as a response to requests from some users for more control over the configuration of their own workstations. We received a small, but useful, amount of feedback, and this has been used to guide an implementation plan. [3]

Possibly the most significant outcome of this feedback has been the demand for a secure filesystem technology that would permit self-managed machines to access the shared DICE filesystem. This is a difficult problem, both technically, and in terms of the implications that it may have for the way in which users interact with other aspects of the system. However, this has now been assigned a high priority, and more detailed proposals and plans should be available in early 2005.

It was also pointed out that "lightweight" DICE machines will actually involve more effort from the user, and should probably be called something different! Hence the new name: "DIY DICE".

The current plan is to offer a range of management options at the same time as the DICE upgrade to a new operating system, next summer:

❏ Fully-managed and supported DICE machines (as

---

[2]http://www.inf.ed.ac.uk/admin/committees/computing/papers/lightweight.pdf
[3]http://www.inf.ed.ac.uk/admin/committees/computing/meetings/04-12-08/lw.txt

at present).

❑ The option for users to add their own software to supported DICE machines, providing that it is suitably packaged, and is confined to a restricted area of the filesystem (eg. `/usr/contrib`). Of course, the responsibility for supporting the additional software and ensuring that it remains compatible with DICE upgrades would remain with the user.

❑ DIY DICE machines would allow users complete control over the configuration of their machines while still retaining many of the benefits of DICE, such as the automatic software updates and LCFG configuration system. There will initially be some restrictions on these machines, such as the lack of access to the shared filesystem, and we intend to provide tools and a forum for "community support" since DIY machines are unlikely to be supportable via the normal support mechanism.

❑ Completely self-managed machines will of course continue to be an option, as at present.

Paul Anderson <dcspaul@inf.ed.ac.uk>

➤ Users Hints and Tips

In which fellow users present tricks of the trades that others may find useful.

To contribute hints or tips to the next newsletter, please contact the **docs-team@inf.ed.ac.uk**.

Mozilla Tip

To prevent annoying flash content from displaying in Mozilla, install the flashblock extension. Available at http://flashblock.mozdev.org/ http://flashblock.mozdev.org

Chris Walton <cdw@inf.ed.ac.uk>

Dying Task Bar

If the "panel" on DICE (the task bar across the bottom of the screen, with menu and short-cut buttons) dies suddenly without warning, this will bring it back: right-click on the desktop, choose "Run Command..." enter "kicker" in the box and click "Run".

Kate Byrne <k.byrne@ed.ac.uk>

Usernames and Real Names

When you only have a student's matric number or login (e.g. it's on the print queue or something) and you want

to know their name, type:

```
 ldapsearch uid=LOGIN
```

Where you obviously replace LOGIN with the student's login. A nice way to use this is with a function in your .brc:

```
function edwho ()
 {
  command ldapsearch uid=$1 2>&1|grep cn:
 }
```

Now you can -

```
 edwho LOGIN
```

It's useful for staff with non-standard logins too, e.g.:

```
mull[gsteel] edwho dr
cn: Dave Robertson
```

Graham Steel <Graham.Steel@ed.ac.uk>

Cron

Although the obsolete manual pages don't tell you this, the version of cron running on DICE supports the special time spec -

```
@reboot
```

- so that you can have a service started when your machine boots.

Julian Bradfield <jcb@inf.ed.ac.uk>

Removing all class files

Sometimes I wish to remove all files with an extension, for example *.class. To this end try:

```
find . -name \*.class -exec rm -vi {} \;
```

Valentin Haenel <valentin.haenel@gmx.de>

R Information

A powerful open source software for statistical analyses and data plotting, the R framework.

R is a system for statistical analyses and graphics. It is an implementation of the S language (which forms the basis of the S-PLUS systems) that can can be run on the Unix, Windows and Mac operating systems. A rather

wide variety of statistical and graphical techniques are provided (linear and nonlinear modelling, statistical tests, time series analysis, classification, clustering, ...).

The R project page:

http://cran-r-project.org

A very short introduction:

http://cbs.sportsline.com/collegebasketball/stats

A good document to get started:

http://cran.r-project.org/doc/contrib/rdebuts_en.pdf

Marielle Lange <M.Lange@ed.ac.uk>