dice NEWSLETTER

July 2006 - Summer Upgrades Edition

The main aim of this newsletter is to inform you about the impending upgrade of DICE machines to Fedora Core 5 (FC5). We also update you on some of the network preparations for the move to the new building, on the introduction of authenticated SMTP and introduce two new computing staff.

Morna Findlay <morna@inf>

New Computing Staff

Welcome to two new computing staff! Stephen Quinney joined the team in February. Stephen graduated from the University of Durham with a degree in Physics and Astronomy.

He then spent several more years carrying out astronomy research. Before joining Informatics he worked for Oxford University Computing Services as a Unix Systems Programmer He is also a member of the Debian development team, specialising in Perl packaging. When not in front of a computer he is likely to be found hill-walking or drinking beer.

Stephen was recently joined by Informatics graduate Graham Dutton who moved from the rainy side of the Forth to study Computer Science at Edinburgh University. He graduated in 2005, but returned to work in Informatics after just six months. For the first half of this year Graham has been working on a development project for Michael Fourman.
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Graham is now looking forward to 'getting his hands dirty' as a Computing Officer.

We are also glad to welcome back Sarah Reed, who has just returned from maternity leave.

Fedora Core 5 Upgrade

Most of you will be aware that we aim to upgrade to the latest Redhat release annually or biennially. The current DICE system is based on Fedora Core 3 which was first released at the end of 2004.

We are now at the point in time where we need to upgrade to gain better support for newer hardware, update various software required for teaching and research and also to continue being able to make use of the security and bug fixes provided by Redhat.

Overall, the upgrade from FC3 to FC5 should not introduce any dramatic changes. There will be many improvements, bug fixes and some new features, but rather than a "big bang" with huge differences it is mainly an "evolutionary" upgrade.

The timetable for the FC5 upgrade process is shown in the chart at the end of this document, and regularly updated information is on the web: at https://wiki.inf.ed.ac.uk/DICE/FC5Upgrade

Please note that we will upgrade all the lab machines to FC5 by the start of the academic session 2006/2007. We also aim to upgrade the majority of user machines by then. This will involve the CSOs in considerable work over the summer and I ask that users help us to meet this schedule by not unduly delaying upgrades of their machines.

Users who have any concerns should contact Support in the first instance.

Alastair Scobie <ascobie@inf>

Test FC5 Machines

A number of test DICE FC5 desktops have been installed. These are provided so that users can become familiar with FC5 and start testing or porting software. These desktops will be installed at the following locations:

AT 5.06	perugia
BP 4 B04	ravenscraig
FH B21,A20	harrow, airhorse
KB 2416	selidor
ANY	fc5.login.inf.ed.ac.uk

Please note that DICE FC5 is still under development and some software remains to be installed. Up to date information about progress can be found at:
https://wiki.inf.ed.ac.uk/DICE/FC5Upgrade

Users who wish additional software to be installed should contact support, via the support form, in the usual way.

Stephen Quinney <squinney@inf>

Software (RPM) Changes in DICE FC5

When we upgrade DICE there is usually a "churn" of packages (RPMs). This happens at two levels and for broadly similar reasons. A number of RPMS are removed, replaced or upgraded by the base operating system and the COs make similar changes in the software layers that sit on top.

Generally we upgrade our RPMS to the most recent stable release and we also take the opportunity to replace applications where there are better featured, better supported or more widely used equivalents. An OS upgrade is also the main opportunity to remove RPMS that are no longer used, no longer actively maintained or which can't be ported to the new OS. This is usually a bigger problem for us than for Fedora because we are usually skipping several releases.

In the forthcoming DICE we are moving from FC3 (1652 RPMs) to FC5 (2185 RPMs) and we will be upgrading a large number of RPMs that were built in-house. The sheer number of changes in DICE makes it impractical to give a full review of all the package changes so this

article is intended as an overview of some of the highlights.

For more in-depth details of the changes introduced in the latest release of Fedora see the release notes:

http://fedora.redhat.com/docs/release-notes/fc5/release-notes-ISO/

Major changes

The gnu-compiler-collection (gcc) has introduced a number of big changes that, in particular, result in the C and C++ compilers now being much more compliant with the standards and also much stricter in what code they permit.

If you require an older compiler they are available as gcc32 and g++32. The compiler suite has also gained a new optimizer that typically generates binaries which execute much faster.

Overview of Changes from DICE FC3 to FC5		
	FC3	**FC5**
gcc	3.4.4	4.1.0
glibc	2.3.6	2.4
libstdc++	3.4.4	4.1.0
perl	5.8.5	5.8.8
X.org	6.8.2	7.0
KDE	3.4.2	3.5.2
gnome	2.8.0	2.14.0
openmotif	2.2.3	2.3.0
qt	3.3.4	3.3.5
tcl/tk	8.4.7	8.4.12
tetex	2.0.2	3.0
openoffice.org	1.1.3	2.0.2
kernel	2.6.12	2.6.16
python	2.3	2.4

teTeX has undergone a major revision. It is intended to be able to handle all existing TeX and LaTeX but we expect that changes will be required for a small proportion of documents. It is

recommended that users of TeX and LaTeX check their documents still work on an FC5 system as early as possible in the transition from FC3 so we will be aware of any problems.

The latest version of X.org X11 (7.0) introduces lots of changes to the locations of its files. In particular libraries installed in /usr/X11R6/lib/ are now in /usr/lib/ and header files are now in /usr/include/ rather than /usr/X11R6/lib/. This should not affect users running applications built for FC5 but may have implications for users building their own software from source if it has a graphical interface.

Contact **Support** in the first instance if you have a query relating to the status of any software under FC5. **Use the support form at:** http://www.inf.ed.ac.uk/systems/support/form/

Stephen Quinney <squinney@inf>

Informatics Forum - Preparatory Network Equipment Moves

Although we are not due to move into the new Informatics Forum until next summer, we are already having to take it into account when planning changes to the existing network. The goal is to maximise the amount of network equipment that we can redeploy after the move, while minimising disruption to installed systems.

One aspect of this, which is likely to affect some users, relates to the ongoing Appleton Tower refurbishments. At the moment it looks as though the best use of resources may be to upgrade some of the network equipment at Buccleuch Place or Kings Buildings, redeploying the existing switches to the Appleton Tower. This should result in better performance for those users of upgraded switches, while at the same time allowing us to consolidate equipment to best match capabilities to requirements. Ultimately the new switches would be relocated to the new Forum, which might well not be possible for the equipment they replace.

As network equipment specifications change rapidly and frequently, we may yet decide that some other approach is more appropriate. We will, of course, warn any affected users in advance if we do decide to go down the upgrade path.

George Ross <gdmr@inf>

Authenticated SMTP

Background

As an anti-spam measure the Informatics mail servers do not allow normal mail connections from outside ed.ac.uk. Unfortunately this also stops legitimate Informatics staff and students from sending mail from their home machines, or laptops while travelling, via our mail relays. The solution was to use the EUCS VPN service or their local ISPs mail relay, thus needing to reconfigure machines/email clients just to send mail.

A Better Solution - Authenticated SMTP

Most modern email clients now support authenticated SMTP. This allows the user to authenticate with the mail server to say who they are, and once confirmed as a valid user, the mail server will allow the user to send mail, even though they may not be within the local network.

We now provide an authenticated SMTP server for mail clients to connect to. The basic details are as follows; note that the "Server Name" is sometimes referred to as the Outgoing Server or SMTP Server.

```
Server name: smtp.inf.ed.ac.uk

Port: 587 (often known as submis-
sion port) – use TLS setting.. or –

Port: 465 – use SSL setting
```
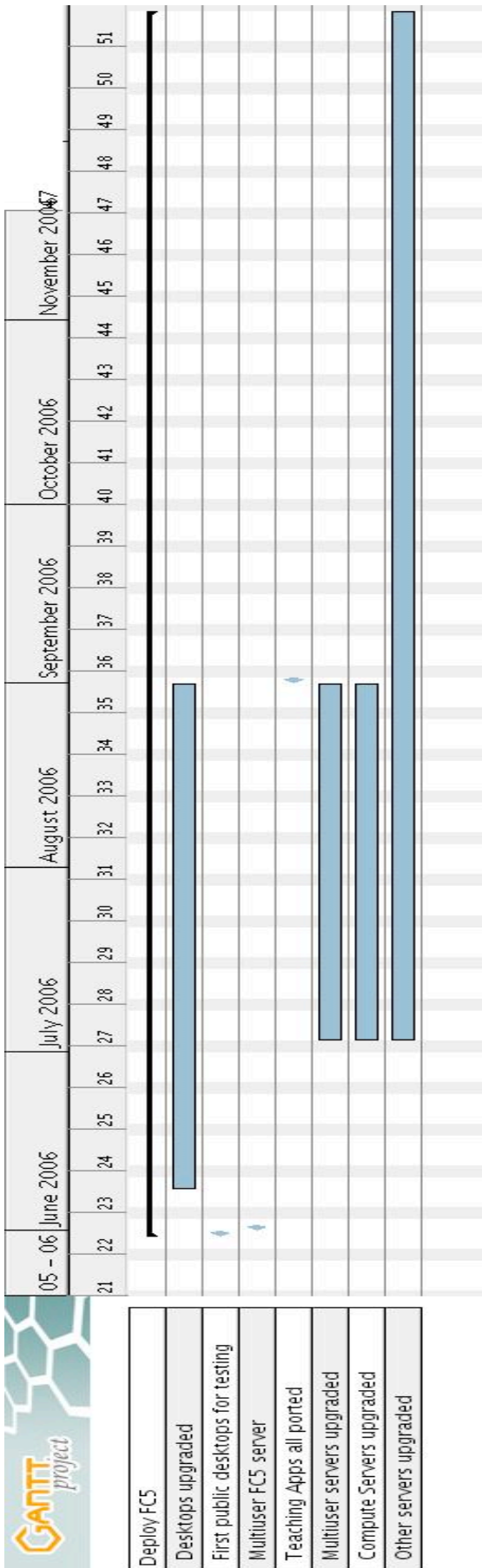
The reason we don't use port 25 is that this is firewalled and cannot be accessed from outwith ed.ac.uk.

Email clients supporting SSL should use port 465 (this includes Outlook Express) and those supporting TLS should use port 587 (Mozilla/Thunderbird).

If your client supports Kerberos then this is supported too (for example: Thunderbird 1.5.0 with MIT Kerberos for Windows or pine on linux).

Neil Brown <neilb@inf>

Timetable for FC5 Upgrade

Gantt chart tasks:
- Deploy FC5
- Desktops upgraded
- First public desktops for testing
- Multiuser FC5 server
- Teaching Apps all ported
- Multiuser servers upgraded
- Compute Servers upgraded
- Other servers upgraded

Timeline: 05 – 06 June 2006, July 2006, August 2006, September 2006, October 2006, November 2006 (weeks 21–51)

Users Hints and Tips

Add your short-cuts, hints and tips to http://wiki.inf.ed.ac.uk/DocsByUsers - a new experimental service where we encourage all users to make their own contributions to computing documentation.