

JANET NEWS

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CEO WELCOME

Happy New Year to you all. As we move into 2012, we are very aware of the changing priorities of our community and the pressures from both customers and the new emerging technologies. Janet has been a trusted partner for nearly 28 years and exists to serve the needs of the research and education community. Capita Consulting's independent Systematic Review of Janet(UK), undertaken in Autumn 2011, stated that "Janet(UK) generates substantial value, conservatively estimated at £11.1 million per annum, as a shared service through the core functions it performs on behalf of the sector".¹ Exciting developments such as the Janet6 network upgrade and Janet Brokerage will greatly enhance the reputation of UK Research and Education. These are but two examples of how we are continuing to meet your needs and deliver significant cost savings for the benefit of all.

The start of 2012 also brought some very sad news and it is with deep regret that I have to inform you of the untimely death of our Finance Director, Andrew Taylor. In his relatively short time with the company he made an immense contribution to the on-going development of Janet for which we are all very grateful. Our deepest sympathies go to Andrew's family and his many friends.

Tim Marshall,
CEO Janet

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EDITORIAL

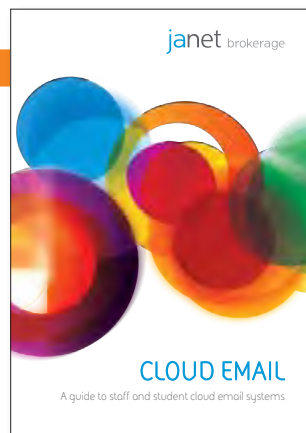
Welcome to Issue 17 of Janet News. As Tim outlines in his welcome, these are challenging times and our goal with this issue of Janet News is to support you in navigating the needs of your organisation. With this in mind, a key theme for this issue is how we can help you, in important areas of decision-making. Janet Brokerage is an example of the steps that we are taking to safeguard the interests of the community and ensure that we achieve economies of scale whilst making the *Financial case for shared services* (pg20).

From cloud to the impact of IPv6 the challenges are many and varied. *Cloud email: Weighing up the options* (pg3) brings together all existing research with our advice on choosing the right model for you. In times of change the experience of respected members of the community can often be invaluable and on p14 we feature an interview with *Arthur Spirling MBE: A lifetime of experience* following his retirement as Director of ICT at Imperial College.

And finally, thank you to everyone who completed the questionnaire in Janet News 16. We are reviewing the subject areas that you would like to see covered in future issues but you can still have your say online at www.surveymonkey.com/s/janetnews. Some of the topics that you suggested will be key themes at Networkshop40. Remember to book your place today (pg38). For more details, follow #nws2012 on Twitter.

Dan Perry,
Head of Strategic Business

¹ http://www.jisc.ac.uk/media/documents/aboutus/annualreview/strand_c.pdf



CLOUD EMAIL WEIGHING UP THE OPTIONS

Most people are already familiar with the idea of cloud student email but corporate email in the cloud is less common. There's no one-model-fits-all but we've brought together existing research and added our own advice, to help you decide whether it's right to move all email into the cloud.

It's not all plain sailing

You'll need to find out what you need and what's on offer: fundamentally does it meet the needs of key stakeholders? What should be migrated? What about Freedom of Information? Patriot Act? Control? Risk? Change?

Only you will know whether your journey to the cloud is the right one. To help you understand the benefits and pitfalls, we've brought together work done by customers, suppliers and other bodies such as JISC and UCISA, and created a white paper: Cloud email: A guide to staff and student email systems.

We hope the white paper answers your questions but as the technology is ever changing, we'd really like your feedback on where it doesn't help, and to work with you and leading suppliers to iron out misunderstandings, and to help shape the product offerings of tomorrow.

View the white paper at www.janetbrokerage.ac.uk/info/research and/or contact us about moving to the cloud by emailing brokerage@ja.net or calling 01235 822337

WEBINARS

Moving staff and student email to the cloud

Thursday 2 February, 12.30-1.30pm

Hear about our cloud email white paper from its author and get an opportunity to ask questions.

Organisational considerations for cloud

Tuesday 7 February, 12.30-1.30pm

Are you thinking of implementing cloud computing within your institution? Hear about the key things you need to consider before going ahead and how implementation is achieved in practice from Matt Cook, Loughborough University.

The Janet Brokerage offering

Wednesday 22 February, 12.30-1.30pm

Find out how Janet Brokerage can help with your impending move to the cloud.

To find out more or book a webinar, please visit www.janetbrokerage.ac.uk/events



CEO of Janet, Tim Marshall (left) and Tony Shepherd (right), Regional Vice President, UK and Ireland, Blackboard signing the agreement.

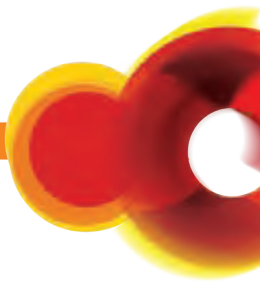
BLACKBOARD RELATIONSHIP BLOSSOMS

As part of a new strategic relationship, our new Brokerage team and Blackboard, the leading technology specialists, will be working more closely together to examine, understand, highlight and market the benefits of shared services and cloud-based technology.

The partnership will include research into the opportunities and barriers for UK institutions working with cloud computing, including Blackboard's Managed Hosting service, and best practices for partnering with commercial suppliers. The joint research is expected to help Blackboard continue to enhance services in response to national demands for increased efficiency, choice and improved service levels in the use of technology.

Our Brokerage service for UK research and education institutions demands a new level of relationship with commercial suppliers delivering value to the sector. This announcement is the first in a series of initiatives to bring forward the benefits of new and improved ways for managing technology in UK education. **JN**

For more information about how we can support and advise you on cloud computing and data centres, please visit www.janetbrokerage.ac.uk or call 01235 822337.



NEW EDUROAM COMPANION APP

eduroam users can now more easily locate eduroam-enabled sites thanks to a new app for the iPhone and iPad.

The app 'eduroam companion' helps users to locate their nearest eduroam point by visualising the central database of eduroam-enabled facilities on a map, and providing information that the user will need in order to connect to the service.

Crowd-sourcing technology

Using crowd-sourcing technology, the app also enables eduroam users to tag a coverage location by positioning a pin on the map where they encounter good eduroam coverage. As tags accumulate, the app will show real-world coverage, helping users to identify their nearest eduroam point. Mark O'Leary, Acting Network Development Group Manager commented: "The new eduroam companion app will help users to find

their nearest eduroam instance, and benefit from the simple, free connectivity it provides."

The eduroam app was developed by Ashley Browning, a third year Masters student at Southampton University, under the supervision of Dr Tim Chown.

Work is currently under way to make the app available on the Android operating system. [JN](#)



The new eduroam app can be downloaded for free from the app store simply by scanning this QR code.

HAIR TODAY, GONE TOMORROW



Some of the men at Janet raised over £800 for men's health charity, Movember by growing moustaches throughout the month of November.

Movember aims to raise funds and awareness for men's health, specifically prostate cancer and other cancers that affect men.



"I'M REALLY IMPRESSED AT HOW MUCH WE RAISED BUT I COULDN'T WAIT TO SEE THE BACK OF MY FREDDY MERCURY MOUSTACHE AT THE END OF THE MONTH."

Tash-grower, Shan Rahulan, Brokerage Technical Lead



FUNDING FOR RESEARCH IN THE DIGITAL AGE

An increasing range of research is now dependent on digital data and related technologies and while some disciplines have well established computer and storage infrastructure with experienced and skilled support and development resources, most are not in this happy situation.



Even where there are established skills and infrastructure, it has been clear for some time that higher education needs to share infrastructure services and achieve much better economies of scale if it is to deliver the quality of service that researchers need while keeping costs under control. The advent of widely available high quality commercial co-location and cloud based services offer significant opportunities in this respect. Institutions such as UCL, Loughborough and a number of others are already engaging with commercial suppliers and taking this path. A survey conducted by Janet with the help of UCISA received responses from 80 institutions, of which 93% were considering similar action within the next two to three years.

Studies such as those published by the Blue Ribbon Task Force (1) and the UK Research Data Service Study (2) and a number by The Research Information Network and the Digital Curation Centre (3) have highlighted the critical importance of research data management. The challenge of dealing with enormous volumes and a wide and growing range of formats and standards for both structured and unstructured data have also been identified.

UMF investment

It was against this background that the University Modernisation Fund (UMF) investment was agreed between JISC and HEFCE to establish a long-term cost-effective approach to the provision of IT services for researchers throughout the UK. Janet is a mature and stable organisation and has been a trusted provider of shared network infrastructure services to research and education and beyond for many years. Therefore there was compelling logic in giving Janet the challenge of widening its brief to include shared computer

power and storage provision, often called Infrastructure as a Service (IaaS), and related added value services, such as software applications offered as Software as a Service (SaaS).

In tackling this demanding objective, Janet has been mindful of the importance of data management for researchers and so has worked with JISC and the Managing Research Data Programmes to set out the requirements and priorities for the provision of new services.

The strategic aim of the UMF investment is to meet the pressures for service, quality and cost control by creating services to attract organisations into a well ordered, trusted and cost-effective working environment which is delivered through IaaS and SaaS. A five year business plan agreed with BIS and the Treasury using the money from the UMF as start up funding is designed to address this through the establishment of sustainable organisational and technological infrastructure.

Janet Brokerage

Janet, working closely with JISC, has established a services brokerage (so named because its role and funding model is intended to be analogous to that of an insurance or ship broker). The aim is to provide a co-ordinated and coherent approach to communicate requirements from the sector to potential suppliers and to understand clearly what suppliers have to offer and advocate their services and capability to the sector.

Already the brokerage has undertaken procurements to establish framework agreements that will facilitate institutional take up of equipment co-location services, virtual servers and storage and IaaS all from the same small group of highly capable

Janet is a mature and stable organisation and has been a trusted provider of shared network infrastructure services to research and education and beyond for many years.



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commercial providers. The first services will become available early in 2012. At the same time Janet is working with Eduserv to provide a pilot cloud service allowing institutions to trial self-provision, through web-based tools, of storage and compute capability on VMware, Openstack and HyperV platforms.

Appealing to researchers

If researchers are to be persuaded into this potentially more cost-effective environment, it's crucial that they have attractive applications that meet their needs, integrate well with their day-to-day work and can be trusted. Four applications were commissioned by UMF, building on feasibility work undertaken within JISC's Managing Research Data Programme (4) and aimed at a range of science and arts and humanities researchers. Janet is working to create sustainable deployment arrangements so that researchers can access and use these applications to support their work and address the complex task of data management. Alongside these four applications, the Youshare project has been commissioned (www.youshare.ac.uk) and further work on data archiving services, together with case studies or "How to" guides from early adopters of Cloud services is in the planning stage.

For those researchers who develop or deploy their own tools, a different approach is needed and in the early part of 2012, Janet will introduce a new and innovative approach to the provision of High Performance Computing (HPC) and storage through the use of a procurement device called Dynamic Purchasing Systems. This provides a flexible framework agreement which encourages supplier innovation as they can join the framework at any time during its lifetime, provided they satisfy certain criteria for service quality, function and performance. Researchers will thus be able to buy compute and storage facilities on a cost effective "pay-as-you-use" basis from a range of trusted suppliers competing to deliver the best possible service. Critically, these capabilities will not attempt to compete with the established, specialised HPC and data centre providers in the sector: rather they will widen the availability of commodity compute power and storage to the large population of researchers, whose needs are not well satisfied by current provision.

In many cases, researchers will access these facilities through their institution's IT teams, who will also ensure that the services are supported as needed and properly integrated with other facilities

used by researchers, such as repositories for data preservation, data management planning tools etc. In other cases, research groups will have the capability and desire to access the services directly and that opportunity will also be available.

Value, value, value

Work outlined in this article is not about cost cutting or even about cost, beyond the normal need for good resource management. It's about value. The time researchers spend on IT infrastructure is time not spent on research, so there is a value in minimising that time. The work that researchers do in manipulating and processing data is crucial in answering research questions, so there is a value in being able to do that quickly, efficiently and reliably. The data that one team of researchers produce is potentially of use to other researchers, so again there is value in making it readily accessible in controlled shared repositories.

Therefore the whole *raison d'être* of the brokerage establishment being undertaken by Janet is to help researchers unlock more value from their work. Of course similar things can be said about learning and teaching and administration, but this is just the beginning... **JN**

(1) Background to the Blue Ribbon Task Force on Sustainable Data Preservation and Access and its report and recommendations is here <http://brtf.sdsc.edu/>

(2) The report of the UKRDS Feasibility study lives under "Documents" tab at www.ukrds.ac.uk

(3) www.rin.ac.uk and www.dcc.ac.uk contain a wealth of information on the needs of researchers for tools, skills and resources. In particular the RIN report on Data Centres and their value <http://www.rin.ac.uk/our-work/data-management-and-curation/benefits-research-data-centres> highlights many of the issues that the UMF initiative is seeking to address.

(4) Each of the chosen application development projects maintains a website and they can be found at <http://vidaas.oucs.ox.ac.uk/>, <http://www.mylab-notebook.ac.uk/>, <http://www2.le.ac.uk/offices/itservices/resources/cs/ps0/project-websites/brisskit/brisskit> and <http://www.dataflow.ox.ac.uk/>


BROKERAGE UPDATE

Over the last four months, we've been creating an infrastructure cloud framework as a flexible means for your institutions to expand or migrate IT server infrastructure and reduce capital expenditure.

We know that many of you are embedding cloud within your strategic plans and we see this framework as the starting point on your journey towards the cloud. Following a rigorous EU procurement process we've selected eight suppliers to form a framework available to all institutions with a Janet connection. We see this as the first of many steps along that journey.

The Government aims for more than half of its IT spend to be on cloud computing by the end of 2015 and have launched GCloud in response to

this. We believe the same to be true for education. By reducing procurement headaches and creating innovative, cost effective solutions, we expect to meet this ever-increasing demand for cloud.

To learn about implementing cloud computing in education and research institutions, from those who have been instrumental in the success for their university or college, come along to our strategic-level conference on Thursday 9 February 2012. For more information, visit www.janetbrokerage.ac.uk 

If you're thinking about moving to the cloud and want to reap the benefits of the work of the Brokerage that's freely available if you have a Janet connection, please contact us by emailing brokerage@ja.net or calling 01235 822337.

PREPARED FOR YOUR IMPENDING MOVE TO THE CLOUD?

Register now for the ultimate strategic-level cloud and data centre event for research and education institutions, including:

- How to lead a successful move to the cloud
- The business case for virtualisation
- Making cloud pay for itself
- Security of academic data
- Procuring cloud and data centre services
- HE and FE case studies

We have an excellent line-up of speakers from the sector who have implemented cloud computing in their institutions.

janet brokerage



CCT Venues-Smithfield, London, EC1A 4PT
(between Faringdon and Barbican tube stations)

Thursday 9 February 2012, 10.30am-4pm
Hot buffet lunch and refreshments

It's free to attend and you can register online from now until Friday 3 February by visiting www.janetbrokerage.ac.uk
For more information about the event, please call the Brokerage on **01235 822337**.

MULTI-MILLION POUND INVESTMENT TO POWER UK'S GROWTH AND INNOVATION

Aimed at supporting the UK's world-class research capability this investment will increase access to high performance computing, data storage and high-capacity networking infrastructures.

Janet, as the UK's research and education network, will receive a proportion of this funding to boost our capability to support data-intensive research. We will continue to ensure that the UK's strategic research facilities are connected at high bandwidth to a network underpinned by the latest optical networking technology.

For Janet this is a very timely announcement as we are in the initial stages of the Janet6 programme to upgrade the current national network-backbone infrastructure. This will be designed to respond to the challenges of increased traffic volumes for data-intensive research driven by the e-infrastructure initiative as well as supporting the broader missions and business requirements of the diverse customer base that Janet serves.

Tim Marshall, Chief Executive of Janet, said that "we welcome this investment which confirms the Government's commitment to high capacity networks that support the ground-breaking work being carried out across the UK's research community. Janet6 is one of the ways that we are building the even greater capacity which will enable UK research to remain a world leader".

The full announcement can be found in the news section of the Department for Business, Innovation and Skills website: <http://bit.ly/wV7E54>

This e-infrastructure investment into Janet will be used to both ensure that the backbone infrastructure is built to accommodate the growing requirements of data-intensive research and that key strategic research facilities in the UK are directly connected to the backbone. Two examples of areas that will be supported are outlined below.

Weather forecasting and Climate Research

The UK Met Office and the Natural Environment Research Council have

a strategic partnership through their Joint Climate Research Programme that supports collaboration between scientists in the two organisations. A major component of this programme is a shared supercomputing facility called MONSooN that has been operating since 2009.

The e-Infrastructure investment will support additional higher-capacity network connections to MONSooN at the Met Office in Exeter where it is located, and these will link via Janet to other important climate research groups and facilities both within the UK and Europe.

DNA sequencing

DNA sequencing requires e-infrastructure to process and interpret increasingly large amounts of research data. Investment will be made to develop new computing infrastructure at The Genome Analysis Centre in Norwich, which receives strategic funding from the Biotechnology and Biological Sciences Research Council. This will also include high-capacity network connections to Janet to enable the rapid exchange of data with partners and collaborators elsewhere in the UK and beyond. **JN**



EDUROAM MAKING AN IMPACT IN FE COLLEGES

Canterbury College, situated in the centre of the city, is one of the largest providers of further and higher education in the south east of England. The college offers over 500 courses at all levels including GCSE, BTEC, apprenticeships, A Level, HND and degree. Their students have recently won national design competitions with London 2012, Paperchase and KEiBA as well as Worldskills UK medals in dance, IT, music and graphic design.

The college is leading the way in social media communities, being amongst the first in the south east to join Facebook, YouTube, Twitter and Google+. They have recently launched their own iPhone app allowing students, parents and local businesses to search the range of courses on offer and apply for places direct from their iPhones.

Anytime, anywhere Internet

With the explosion of digital devices, the college recognised that staff, students and visitors wanted to use their devices in the classroom, and also in recreational areas such as the food hall, social spaces and outside. The demand for Internet access for personal reasons was supplementary to the need to access college resources such as Moodle and e-portfolios.

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Students walking through reception at Canterbury College

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Secure, authenticated services


The college had implemented a wireless network as part of a campus redevelopment project that enabled the use of personal devices. However in order to meet the need for a robust, secure service that required users to authenticate in order to gain access, the college decided to implement the eduroam service over their wireless infrastructure. Janet is the UK provider of eduroam, which allows network logon and internet access at any eduroam-enabled site using their own username and password – without the

need for guest account set up. The Janet infrastructure underpins the service, enabling participating organisations to offer secure Janet-connected eduroam networks for guests and their own users over wi-fi, by wired connection and at hot-desk workstations to students, staff and research users.

eduroam was chosen as the solution: since there is a large installed user-base within the education community with community support readily available and it is a tried and tested

solution. As eduroam utilises user credentials from an existing directory service, either on site or remotely in the case of visitors, the management overhead in terms of issuing usernames and passwords was significantly reduced. For a small central IT team this was a big advantage.

Starting in February 2010 the central IT team phased in a significant number of wi-fi arrays based on a Xirrus solution. These wi-fi arrays now provide eduroam coverage to about 90% of the Canterbury campus.



Feedback from users has been consistently positive and the eduroam service has been very reliable. It has proved to be a service that is highly valued by students, staff and visitors alike.

Age restrictions

As the college has students as young as 14 on site, they recognised that they were unable to offer unrestricted access to eduroam users, and as a duty of care were required to provide a level of website filtering appropriate to the users. The Lightspeed web filtering solution that the college has recently implemented enabled them to set up a default baseline policy for all eduroam-connected users. This provides users with a safe browsing experience with access to the most common websites whilst also protecting younger students from inappropriate content.

Installation and ongoing management

The eduroam service was installed as three virtual servers on a SuSE Linux Enterprise server. The initial set-up was not as straightforward as expected, mainly as the workflow was a new concept and the various support materials available have an expectation that users will already be aware of how RADIUS works. Documentation from several sources within the community were used, including Janet, the University of Sussex and the eduroam.org website.


To ensure maximum take-up of the service, the IT team investigated several ways of connecting client devices, finally preferring users to make a few simple changes to their device's wi-fi settings. A real benefit of the service is that the necessary daily maintenance is minimal. There is the

obvious management of the eduroam server as for any other service, but there has been little cause to make changes or spend time administering the service itself.

The college IT helpdesk was fully prepared to help users configure their devices the first time they try to connect, but the number of students needing help was relatively low and, following set-up, users have very few problems in connecting to the eduroam service on site or at other eduroam-enabled organisations. Some operating systems have proved more difficult than others to configure and the college is investigating the development of an auto configuration tool to aid the process.

Promotion of eduroam

The service was promoted to users via the college prospectus, the network login splash screen and the student computing guide and website. Posters and leaflets were also distributed in the busy Learning Resource Centre. During November 2011, usage peaked above 600 daily users and it is anticipated that growth will continue. Devices of all flavours have connected to the service including Android, Blackberry, iPhone, iPad and Windows, Linux and Mac based laptops.

Feedback from users has been consistently positive and the eduroam service has been very reliable. It has proved to be a service that is highly valued by students, staff and visitors alike. 

Canterbury recommends six things to consider before starting an eduroam installation project

1. Support from Senior Management regarding an eduroam policy, its implementation and the supported devices, is vital.
2. Consider how you are going to separate eduroam traffic from other traffic on your network.
3. If you are in close proximity to other eduroam (or potential eduroam) sites, open dialogue with them about what to do about interference.
4. During initial set-up, talk to people who have done it already about the technical aspects – it will save you time.
5. Decide early on how you are going to store and maintain the RADIUS logs (pushing it onto a MySQL server, for example, and automating old record deletion). This may affect your set-up considerations.
6. Consider how you will support the service and the various devices involved – make sure your helpdesk team are fully aware and able to support the service.

ARTHUR SPIRLING MBE

A LIFETIME OF EXPERIENCE



Arthur Spirling MBE recently retired as Director of ICT at Imperial College, having worked at the same organisation since December 1964. As Director he led a team of over 200 staff providing 24/7 support across 15 campuses. His guiding belief has always been that customer service comes first: IT is there to satisfy customer needs rather than as an end in itself.

You joined Imperial before even the Flowers Report, which led to Janet's creation. What was the state of IT at Imperial then?

There were no generally available computers at the College. There was however networking. It was only point-to-point and linked College, via a dual twisted copper pair, to the Atlas computer in Gordon Square. One of my first jobs was sending jobs to that computer using paper tape via a reader on Level 9 of the Electrical Engineering building. A day or two later the output arrived back by van.

In early 1965 Imperial got an IBM 7090, with tape drives and 32,768 words of memory. The predominant language was FORTRAN which was input via punch cards. In 1968/9 ULCC got a CDC6600, which all the colleges in London could access via CDC 1700 or CDC200 user terminals each of which had attached a punch card reader and local line printers. Punch cards lasted some 20 years.

Again the networking was purely proprietary – there were no universal standards. Our terminals couldn't send data to IBM, ICL, Honeywell or any other manufacturers.

What was the career path that got you from reading cards and paper tape to Director of ICT?

Long and varied! I became a shift operator, then operations manager and I did programming in COBOL and assembler. I also got hooked on providing a customer service.

Some IT people were – and still are – more enamoured with the IT than with the service, as reflected in the awful term 'user'. On the networking front there were arguments between those of us content with fast proprietary communications because they gave good customer service and the Coloured Book community. They were more concerned with the laudable principle of universal

connectivity, even though the Coloured Books protocols were useless from a customer service point of view because data transmission speed fell by a factor of 10. I thought then, and still do, that if you're spending vast sums of public money, you owe the public a good service. Hence I got into service management, based on an in-depth knowledge of information technology.

How has the role of Director of ICT changed since 1964?

Insofar as it means running a good customer service, not at all. How that service is delivered has changed enormously. There are even standards e.g. ITIL.

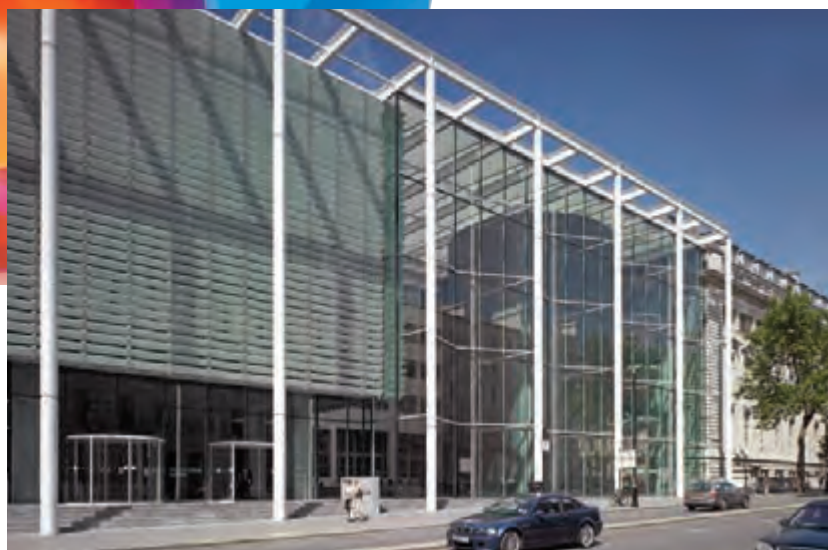
Staff with different skills – operations managers, applications and systems programmers, network gurus, data base analysts, desk top support staff – must all work together as a team, rather than in silos doing their own thing arbitrarily.

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The Royal School of Mines building on Imperial College London's South Kensington Campus

© Imperial College London / Christian Richters



The Royal School of Mines building on Imperial College London's South Kensington Campus

Even backroom anoraks must now be aware of real customers. Via the helpdesk they need to speak to physicists and medics in English, not three-letter acronyms, they need to understand the issues the customers have. They even need to communicate with them face to face!

Speed of delivery of IT services to market has changed dramatically; we must therefore be increasingly responsive. As an example, at Imperial we ask our academic colleagues to tell us what new applications they want for the new academic year, ideally by the middle of September. Another organisation I know of require their academics to do it by May. My academics would go potty if I tried that! Agility is the order of the day. IT must be delivered 24x7. Some organisations still take 2-3 hours of 'network at risk' or planned maintenance time out of production time. But, when do Google, E-Bay, E-Bookers do their planned maintenance? We all need stratagems to avoid taking up production time.

We have a worldwide audience. In 1964, most of my customers lived very close, so when the College shut,

we could shut. Now students, staff, prospective students and potential research fund donors can be all over the world and want to access our systems regardless of what time it is in the UK or whether IT staff are on holiday.

Customers expect to compute anywhere, anytime from anything, and they expect that services will be easy and intuitive to use. I try not to buy software that needs a training course to learn.

What was your vision for your role as Director?

To be responsive to the needs of all my customers, students, staff and external collaborators alike. I wanted my customers to have a direct influence on the services they received. I arranged for all the governance committees, even those mostly concerned with administrative systems, to be managed by senior academics and have students on them too.

I also made the service increasingly customer-oriented. Emails advising of systems upgrades should be signed by a person, not 'Sincerely, Systems Admin'. I've always run an open door policy both via my Help Desk and my own

office. People have always been able to come in to my office and talk to me.

It has always been hugely important to me that our IT services meet the needs of our students so I am especially pleased that the College's National Student Survey score for IT, which is in the 90s, is one of the best of the Russell universities. Janet helps contribute to this too because Internet access is always up. If the Janet service was not good, it would adversely affect their view of the overall IT service that College offers, particularly as their IT work is increasingly done off campus.

Your MBE was for 'services to Higher Education'. What have you brought to Imperial that has spilled over into the rest of the sector? What are you proudest of?

The College recommended me, which was a nice vote of confidence, but I also regard it as a vote of confidence in the whole ICT team without whose efforts I could not have achieved what I have. I keep banging the drum at RUGIT and other meetings, about the need for customer service and doing my best to inform others how best to ensure their IT services remain relevant.

I'm very proud to leave College with a centralised, but highly responsive, IT service appreciated by the whole College and to leave an excellent team that works very closely together and will carry on the good work.

What has been the one biggest idea or opportunity that Imperial and the sector have missed?

I don't think Imperial has missed anything. One reason I've stayed so long is that College IT has always been at the leading edge driven both by ICT and the customer base, made up as it is of very bright and demanding people. We were one of the first universities to run thick Ethernet. We got into email in 1986 while others

didn't until the early 90s. We pushed self-service of both academic and administrative applications faster than many others. We got into mobile applications a bit later than some other organisations because I wanted the offering to be really comprehensive and readily expandable.

The sector hasn't really missed anything either. The Web took off in universities much more quickly than in commercial organisations. High Performance Computing has been led by many universities. HE has always done a very sound job with the money available to it. I do despair about the waste of public money on IT in other sectors, for example the National Audit Office's concern about the lack of value from the £12.7 billion spent in the NHS.

One of my first jobs was sending jobs to that computer using paper tape via a reader on Level 9 of the Electrical Engineering building. A day or two later the output arrived back by van.

How much difference has Janet made in its 25+ years of operation?

Janet's main contribution has always been to take away the headache of connectivity. We don't have to negotiate contracts with a myriad of ISPs, establish Points of Presence, manage traffic flows, etc. it is done for you. Janet is a competent supplier of networking, so why wouldn't I use it?

It's always been a good service with gradual, steady improvements. Ironically one of its problems is there are not enough service failures, if there were people might be more aware of what they were missing!

Janet's availability rate has always been supremely high and it's still ahead of the commercial sector. Colleagues who join Imperial from commerce are always pleasantly surprised at the high availability and responsiveness of all our services.



The Bessemer building on Imperial College London's South Kensington Campus

Where do you stand in the debate on Janet funding?

When resources are scarce you put them into what really matters and is really valued and essential to the community... Janet matters. A decision not to fund Janet as a priority would be so silly you couldn't believe it.

However, Imperial is surrounded by ISPs who would happily offer us a service for not much more than Janet now costs us, and if our Janet subscription goes up too much then we would seriously consider doing our own networking, together with other

London institutions. Whilst we rely on the professional skills of Janet: many of us also have those skills, given the complex nature of our in-house networks, and the ISPs are skilled too. Janet must look carefully at its costs too, for we are all in an increasingly difficult economic environment. Imperial, and others, have no desire to opt out of Janet, but we must continually look to value for money.

If Imperial wants some software then it comes out of my IT budget for the whole college. If a particular department wants some software then it comes out of the department's budget. Perhaps Janet should be run in the same way. A service like CSIRT is of use to everyone but if a service is only useful to 10 people, those 10 people should be the ones to pay for it.

What challenges face Imperial and the HE sector over the next 25 years, and how can Janet assist?

No one can see that far into the future, but Janet can usefully keep an eye on where the technology is going and help us do that most difficult of things, spot the technology that is going to be a winner. Nearer term, it must keep its customers involved. Bringing the RNOs in-house means that the customer base has grown fast – 20 RNOs to 200 individual organisations. It needs to be adept at keeping us informed and consulting with us and actually listening to that consultation.

The Research Councils, rightly, want all publicly funded research generated data to be properly and professionally backed-up, preserved and made available for sharing; this is going to be a big issue. Putting it in the cloud is easy to say, but you have to get it out again too.

Janet must help us in shifting big data across the network and in and out of clouds. **JN**



BCE IN ACTION

In an increasingly complex and competitive environment, organisations connected to Janet regard it as critical to develop their business and community engagement (BCE) activities – and Janet is ideally placed to support these requirements.

In 2010 Janet undertook a community-wide consultation to understand how the network could better support and compliment BCE activities. Based on the feedback received, a review of policies that regulate who can use the network and for what purpose, was carried out. The key policy changes were:

- The Janet Connection Policy has been replaced with a new Janet Eligibility Policy and
- The Janet Acceptable Use Policy has also been updated to align to this new eligibility policy.

Any organisation with a Janet connection may decide itself how it uses Janet in this area. For example it may choose to pass on some of its own Janet bandwidth to a partner organisation, or use Janet when providing its own ICT services to a partner organisation. There will be no additional charge from Janet to the institution for the use of Janet bandwidth in these ways.

Impact of Janet policy changes

Since the policy changes were announced in Autumn 2011, there has been significant interest from the Janet community. It is clear that organisations can see how the policy changes can add value to existing activities. But with such diverse BCE activities, it can be difficult to realise the value that your Janet connection can bring. Having a Janet connection can support all sorts of BCE activities, which is great news for students, staff, third parties and local communities, as the following examples demonstrate.

Community Partnerships



Coleg Morgannwg has a direct association with the Cardiff Blues Rugby Academy supported through the new BCE arrangements. The nature of the partnership is that the College provides the educational environment for the majority of 16 to 19 year olds who are also registered as Blues Academy players. It focuses on both their educational development through the Level 3 programme and Advanced Welsh Baccalaureate and their athletic development, giving learners access to superior teaching, high level coaching and facilities delivered by Academy staff.

Student Callum Lewis said "The college has been great. Without playing in the competitive college league I don't think I would have been called up for Wales which shows how much they have helped my career. The academy is a perfect balance between work and rugby; the tutors give us responsibility and space. Anyone who wants to learn and play rugby should definitely get down to the college."

Social Enterprise

Social Enterprise is a key area for many organisations as 'lynchpins' of their respective communities. St George's Hospital Medical School is one example where they are looking to incorporate two social enterprise schemes namely, the International Centre for Drug Policy and Books Beyond Words.

An organisation wishing to take advantage of these opportunities will need to ensure that its decisions and their implementation are consistent with good commercial practice and comply with current regulations, particularly with respect to state aid and competition law.

Visit the Janet website for practical advice on managing state aid issues and implementing BCE:
www.ja.net/services/bce/bce.html

Bradford College is looking to do the same though supporting Common Purpose - an international, not-for-profit organisation that has been running leadership courses and workshops for over 20 years. The University of the Highlands and Islands (UHI) is considering proposals from a local museum to host their catalogues and make them available across the Internet.

Corporate Partners

Loughborough University has numerous activities and partnerships that are supported by the new BCE arrangements, which has opened up their ability to support such relationships. This will result in a 50% reduction to the bandwidth requirements currently sent out via a commercial link, which will convert into tangible cost savings.



The Royal College of Art is another example of BCE in action. It will be providing services for a partner organisation (the US Olympics Committee) during its six-week stay in the UK for the Games in Summer 2012.

Shared Service Provision

The work involved with BCE will also go to supporting community relationships in regard to the development of Shared Services Provision, crossing educational and public sector boundaries. The University of the West of England have a number of activities in this area involving corporate, public sector and educational partners.


BCE is enabling Janet partners to support their own organisational missions through a range of benefits

1. cost savings
2. utilising existing infrastructure & simpler network management
3. autonomy in decision making
4. flexibility in reacting to community or commercial opportunities
5. supporting public sector efficiency.

Janet is a critical partner in providing the infrastructure and policy framework to enable BCE activity, and will continue in its mission as a trusted advisor and intelligent customer in supporting the community to achieve its goals.

Footnote

We have received feedback from some Janet customers about offering access to the general public. We are currently investigating the requirements and issues surrounding this area, specifically protecting the status of Janet as a private network.

For advice on BCE, please contact Paul Wakefield, Email: paul.wakefield@ja.net 



THE FINANCIAL CASE FOR SHARED SERVICES



Pramod Philip,
Interim Director
of Finance, Janet

Shared services have been in operation among private sector and not-for-profit sector organisations for decades, allowing participants to gain economic benefits from pooling resources.

A well-known example from each sector is the BACS system, created by a consortium of 16 clearing banks in 1968 for handling interbank transactions, and the Universities Superannuation Scheme, created in 1974 and now one of the largest pension schemes in the UK. The Gershon Review (HM Treasury, 2004) and the subsequent Transformational Government Strategy (Cabinet Office, 2005) promoted the wider implementation of shared services within the publicly-funded sector.

A SPECTRUM OF SHARED SERVICES

THERE ARE FOUR COMMON CORPORATE MODELS FOR SHARED SERVICES, WHICH DIFFER IN TERMS OF THE EXTENT OF THE PARTICIPANTS' OWNERSHIP AND CONTROL OF THE ENTITY PROVIDING THE SERVICE.

1

An existing organisation, with the necessary capacity and capability, expands to provide services to other similar organisations.

2

A joint venture is created as a contractual agreement between the interested parties, to deliver the shared service between themselves.

3

A separate central 'club' organisation is set up and owned by the members, to deliver a mutually required shared service

4

Delivery of the service is outsourced completely to an external unconnected organisation.

Financial benefits of shared services

Shared services, if implemented effectively, can bring significant financial benefits. Economies of scale should reduce the cost-per-transaction, benefiting the income and expenditure accounts of all the partner organisations. And pooling services will reduce the otherwise duplicated capital investments individual organisations need to make, thereby improving the partners' balance sheets.

Capita Consulting's independent Systematic Review, undertaken in Autumn 2011, stated that: "*Janet generates substantial value, conservatively estimated at £11.1 million per annum, as a shared service through the core functions it performs on behalf of the sector*"¹.

Non-financial benefits also create efficiency gains, but these financial opportunity savings are much more difficult to quantify. Examples include:

- Carefully-defined processes help ensure high and uniform quality standards;
- Aggregating routine transactions within a shared service centre provides more agility to respond to unexpected new demands;
- Better information and data can produce further savings, for example being able to benchmark service cost and quality against peers;
- Shared services provide the critical mass that makes specialised facilities, otherwise too expensive and used too infrequently, available to individual partners.

Some shared services work effectively only in geographically-close regions, such as the Bloomsbury Colleges' Combined Heat and Power Consortium. However, many are applicable nationally, such as the risk pooling offered by tertiary education sector mutual insurer UMAL and, of course, the connectivity delivered by

the Janet network. For some outsourced shared services, such as call centres and transaction processing centres of multinational companies, the service is delivered in the country that offers the best blend of cost and technical expertise, sometimes with two or three worldwide locations to allow for time differences and provide resilience.

University Purchasing Consortia are delivering very sizeable savings via procurement aggregation for their member institutions. The London Universities Purchasing Consortium (LUPC) has around 40 members, including Janet, and offers its members a wide range of goods and services (for example, laboratory consumables, office furniture and postal services) that can be purchased at heavily discounted prices via agreements it has negotiated with suppliers. The 2009-10 LUPC Annual Report reports savings of £25 million delivered for members in respect of consortium expenditure of £132 million in that year.

CONTINUED ON PAGE 22 >>>

¹ http://www.jisc.ac.uk/media/documents/aboutus/annualreview/strand_c.pdf

>>> CONTINUED FROM PAGE 21

Five main issues for success ...and failure

Bodies like the University Purchasing Consortia and Janet have a key feature which is a huge advantage for any shared service: they are trusted mutual associations created by their members and run for their members. Also, being not-for-profit entities, any surpluses generated are not paid out to external shareholders, but retained to help assure financial sustainability and re-invested in future member services.

Effective shared services within research and education generally have the following common issues:

- a. The participant member organisations have a similar mission and ethos, which results in fewer conflicts of interest;
- b. The original 'bottom-up' push to create a shared service came from the members themselves;
- c. The shared service is owned mutually by its members – with an independent and experienced chair who exercises strong governance and ensures all stakeholders' needs are taken into account;
- d. Members' service requirements and business processes are identical, or very similar;
- e. The shared service has a demonstrable focus on excellent customer service.

Because of the huge changes involved, new shared services sometimes go wrong very badly, and very expensively. A 2011 National Audit Office report on the FiReControl project, designed to replace 46 local control rooms across England with nine regional centres, concluded that at least £469 million will have been wasted due to the decision to terminate the contract in December

2010 after a catalogue of problems. The most common issues that cause delays, overspend or even the ultimate failure of new shared services, are:

- a. Future users have not fully bought into the design of their future shared service;
- b. Competing organisations have little appetite to share services, even though there may be significant financial benefits;
- c. Difficulty in coping with a big change in culture, especially when staff within shared service providers and purchasers are not used to working collaboratively;
- d. Inadequate leadership and project management of the creation of the shared service, and the subsequent transition of people and processes;
- e. Lack of trust between the shared service purchasers and providers – which leads to disproportionate time spent on monitoring service delivery.

Collaboration is a defining strength of the UK Research and Education sectors

VAT and shared services

During 2007-10, HEFCE funded approximately 40 projects exploring the feasibility of new shared services in the higher education sector². In some cases, the feasibility studies concluded that whilst there were sizeable financial savings that could be achieved, this would be outweighed by the output VAT the suggested new shared services entity would have to charge its customers. For most Janet-connected organisations, input VAT is largely

irrecoverable, so represents an unwelcome additional cost that has been another inhibiting factor for the uptake of shared services.

However, in his Autumn 2011 Statement, the Chancellor of the Exchequer announced the Government will introduce a VAT exemption for services shared between VAT-exempt bodies, which will be particularly relevant for universities and charities³. The result will be to bring UK VAT provisions in line with those of the European Community.

Continuing to share services in UK research and education

Collaboration is a defining strength of the UK Research and Education sectors. There are strong formal and informal networks between researchers, teachers and administrators in different institutions and groups of regional institutions. These links have greatly benefited the quality and provision of research and teaching.

The Widening Participation agenda in the 2000s saw the emergence of much better collaborative links between local HE and FE providers, making it easier for students to enter higher education. The 2011 BIS White Paper "Students at the Heart of the System" notes that a review chaired by Professor Sir Tim Wilson will examine how to make the UK the best in the world for university-industry collaboration.

Janet will continue to make ongoing investments in our network and related services – in particular, we have started the procurement of the next generation Janet6 network – to ensure we remain an effective shared service that helps maintain the world-class reputation of the country's Research and Education sectors. **JN**

²<http://www.hefce.ac.uk/finance/shared> ³http://cdn.hm-treasury.gov.uk/autumn_statement.pdf

GAMMA SIP TRUNKING OVER JANET

In November 2011, Gamma became the latest "Janet Connected" partner after agreeing a direct, geographically diverse interconnect to provide voice services in the form of SIP Trunking to the Janet community.

SIP Trunking is an alternative to ISDN whereby the calls are routed from the end users' premises as IP packets using the SIP protocol over the Internet. Calls can be routed entirely within the Janet network before reaching Gamma's Softswitch and accessed directly by users through their existing Janet connection.

Janet connected organisations have the ability to utilise existing connectivity for SIP delivery, offering opportunities for cost saving and/or rationalisation of communications services.

This agreement adds to the growing list of companies to become "Janet Connected" offering the community a pool of suppliers that have a direct, physical connection to the core of the Janet network offering the quality, speed, reliability and availability that Janet has represented for over 27 years.

Gamma is one of the UK's largest providers of voice and data services, switching in excess of 800 million minutes per month over their softswitch infrastructure. Gamma interconnects to BT at 650 Digital Local Exchanges, which are hosted off their national fibre network.

For Janet users, Gamma SIP trunking represents a real alternative to long-term ISDN contracts. Using an existing Janet connection your organisation can have access to business grade telephony with inbuilt flexibility and cost savings.

Connectivity is straightforward. All that is required is a 'SIP enabled' PBX or suitable gateway device, knowledge of the user's fixed IP address, number of channels required and a suitable Janet connection. The service can be set up within a few minutes and includes a number porting service, which allows users to retain their existing number

Gamma provides the service through a number of selected partners. For more information please contact:

Stephen Ashley-Brian, SIP Trunking Product Manager, Gamma.


Email: stephen.ashley-brian@gamma.co.uk

Paul Wakefield, Customer Engagement Manager: Third Party Services, Janet.

Email: paul.wakefield@ja.net

ranges and/or add new numbers as required. On-net Janet calls within the same organisation, regardless of location, are free of charge.

Specific features that are unique to SIP Trunking are outlined below.

- **Flexible numbering** as this is an IP based service, geographic numbers (area codes) can be provided to any UK location, meaning that a distributed campus can use the same number plan wherever they are.
- **Scalability** rather than being subject to a minimum of eight channels per connection (as with ISDN30) SIP trunks suffer no such restriction. They can also be turned up or down with much greater ease offering increased flexibility during periods of high call usage.
- **Service Continuity** in the event of a network or hardware problem, new SIP endpoints can be created within minutes including replication of the number plan. The Gamma system also includes a portal based call divert feature which enables individual DDIs or entire ranges to be diverted as/when required. 

3G PRICING TAKES ON THE MARKET

The price list for Janet 3G has been revealed. The service, which was announced at Networkshop 39 on 12-14 April 2011 at the University of Hertfordshire, has received widespread approval among early adopters

Janet 3G was launched to be the standard in remote access to learning materials in the education community, while also allowing mainstream internet access. The service comes in a number of competitively priced service plans and options.

For example machine to machine (m2m) – allows machines to communicate without human intervention. This service is used for

automated communications in areas such as fieldwork experiments that would send data back to a base machine automatically. The m2m option also serves for academic staff that travel a few times a month, the service can be enabled in their mobile device to minimise their data costs during these times.

Below is the pricing table for the Janet 3G service.

Janet 3G provides you the chance to connect seamlessly with any of your learning materials anywhere in the UK. The service will allow you to access content such as online journals, lecture slides and even exam results.

Extending access

Janet 3G is a tailored service for the research and education sector that can be operated in conjunction with eduroam where appropriate. [JN](#)

Selected examples of 3G pricing

Service	Hardware	Data allowance (per month)	Contract period	Monthly cost (exc VAT)
Machine to machine	No	N/A	1 month	£4*
Low bandwidth	Dongle	500MB	12 months	£9
Mid bandwidth	No	2GB	12 months	£11
High bandwidth	MiFi router	1.5GB	24 months	£22

* Price based on data usage (per MB)

Low Bandwidth

This option is best suited to a minimal user – if all you need is to check and send email then this is the option for you.

Mid Bandwidth

This option suits heavier internet users – if you need to access recorded streams of your lectures or read lots of journals every week, this one is for you

High Bandwidth

This option suits the heaviest of data requirements. You may have several devices to connect. Or want to share your connection with the MiFi router. The inclusive 1.5GB will see you through the most data consuming of months.

For more information visit: www.aql.com/janet3g



ST ANDREWS EMBRACES 3G

You might not associate a University approaching its 600th Anniversary with leading edge technology and modern working practices.

However, at the University of St Andrews they are in the process of a major transformational change programme, embracing cutting edge technology and systems wherever they can to leverage business benefit. One such example is the provision of tablet devices such as the iPad for staff providing access to corporate applications and data wherever they are.

Challenge

As a Scottish institution with global reach, many staff spend time travelling and working internationally. The University of St Andrews needed a solution that would provide access to their existing applications and data globally and have the back up to support this.

Janet 3G

aql supplied Janet 3G Micro-SIMs for use in staff iPads. The tariff supplied was on a pay-as-you-use basis, meaning that billing would only apply to the data that was used. Dedicated aql support staff would also be on hand to deal with any problems that may have arisen.

Outcome

Senior staff at the University of St Andrews trialled the Janet 3G-enabled iPads in Scotland and also in the USA. They were able to access the data/applications that they required with minimal fuss and were left more than satisfied by the service and level of support received.

University of St Andrews CIO (Chief Information Officer) Steven Watt said "The solution provided by aql is already delivering significant business benefits as it easily integrates with our existing ICT environment, without us being committed to a lengthy and restrictive contract should we wish to adapt the solution further."

He continued: "The service worked flawlessly and I and my colleagues quickly benefited from always on connectivity to our email, calendar and other corporate information. When we did encounter some issues in North America with access to a mobile network, aql staff were very responsive and a resolution was found and quickly applied to the SIM card, restoring service promptly for my colleagues.



St. Andrews University, quadrangle

"The network coverage provided by the service was excellent, making the overall experience a very positive one. It's reassuring to know the system is supported by a dedicated team at aql, meaning that my own staff can focus on delivering other business solutions as part of our e-enablement and ICT enhancement programmes." **JN**

"aql responded and exceeded my expectations with all aspects of their service. The micro SIM cards arrived before 9am the next day and with them being preconfigured, they were quickly installed and operational"

Steven Watt,
Chief Information Officer,
University of St Andrews

SPOTLIGHT ON JANET CSIRT



Organisations face a bewildering and growing number of problems when protecting their information systems and with the ever-increasing threat from hackers and malware, it's good to know that the Janet network is protected by experts in the form of Janet CSIRT.

Janet CSIRT is the Computer Security Incidence Response Team for the Janet network. Our remit extends far beyond the continued and secure operation of the network. The team also provides advice to Janet customers on security issues while guarding the reputation of Janet as a safe part of the Internet.

Janet CSIRT deal with hundreds of security incidents every day ranging from routine reports of malware infections and copyright infringement; to serious and complex incidents involving compromised systems; stolen information and denial of service attacks. Together with the other members of the network operations team, Janet CSIRT closely monitor patterns of traffic on the network for known malicious traffic and take technical measures to protect customers and sections of the network where appropriate. We can also act as a point of coordination across the community, to make sure that information and advice reaches the right people at the right time.

Reporting incidents

Most incidents are reported to us by e-mail, which is usually the most convenient way of reporting routine incidents and those requiring large volumes of detailed logs. We are always happy to discuss issues and problems on the phone and more often incidents end up using a variety of channels to make sure that information is shared effectively. All incidents are dealt with in confidence. We'd rather that harmless events were reported and simple questions asked than have critical trends missed and mistakes made. The smallest and most innocuous events help us build up a picture of activity on Janet that may not always be obvious to network operators.

Monitoring network data

Janet CSIRT use netflow, which gives crucial information on which hosts are communicating on the network, when and how. We think of this information as the networking equivalent of an itemised phone bill. We can't see the content of communication but

Janet CSIRT use netflow...
the networking equivalent
of an itemised phone bill.



Follow Janet CSIRT on
Twitter @JanetCSIRT

real-time analysis of this data enables the team to proactively detect known malicious activity on the network such as port scanning and attempted malware communications.

Post-incident analysis is also vital and we can access an archive of data to trace events back to their source and identify any attack.

Defence against attack

In the event of an incident, we have a number of tools at our disposal. Blocking traffic to or from a particular address in order to protect a particular system on Janet can be done promptly after a problem is identified. Where subtler filtering of traffic is required, we work with customer's network staff, regional network operators and our transit and peering partners to stop malicious traffic.

Sharing information and lessons

It is important that information on how to tackle incidents is shared. We frequently put customers in touch with other members of the community who have faced similar problems so that they are able to share the technical measures and lessons learnt from previous incidents. But our reach and collaboration extends beyond the Janet community. Security incidents almost inevitably have a scope beyond the border routers of Janet. By working with security teams, groups, law enforcement and governments throughout the UK and internationally we are able to help in the coordination of security incidents with a global impact. Primarily we work with other research and education CSIRTs within Europe, but we also participate in FIRST, the global Forum for Incident Response and Security Teams.

Some of the advice we frequently give is available directly from our website in the form of articles and factsheets covering issues such as malware, secure DNS and mail configuration, the Janet Security Policy and logging.


We run an announcement mailing list for distributing important security information to customers, and a more general discussion list for less critical information, announcements and discussion of issues affecting the community. Important announcements are usually posted to our website, along with monthly summaries of incident activity.

You can follow Janet CSIRT on Twitter @JanetCSIRT. We post and retweet interesting information security news and articles, as well as the occasional discussion of current incidents and security issues.

Janet CSIRT exists to proactively help the community and protect the network. Not every organisation can afford to have their own security experts so it is reassuring to know that you can contact Janet CSIRT at any time. Outside of office hours, Janet CSIRT are on call until midnight during the week and 0900-1700 at weekends. Janet CSIRT not only handle calls from our customers, but also those outside our community who have been affected by security incidents occurring on Janet. By treating the Internet community in this way, we help spread the well-deserved reputation of our customers.

Time is critical in any security incident and to help us better coordinate the response in a timely fashion we ask that organisations provide us with a single point of contact through which we can work.

Your security contact doesn't need to be able to solve every incident but they should be in a position where they can get the right people in their organisation working together to secure their systems.

Have you checked your designated security contact details recently? Give Janet CSIRT a call to check that your contact details are up to date. 

STRATFOR HACK: 860,000 SUBSCRIBERS AFFECTED

On Christmas Eve the hacker collective 'Anonymous' accessed the web servers of STRATFOR, a Global Intelligence think tank based in Austin Texas, and copied 200 gigabytes of data. The account details of approximately 860,000 subscribers have been compromised following this attack including 1,500 Janet users at 200 sites.

Smash and grab

So far the unencrypted credit card details of 50,277 subscribers, 47,680 email addresses and upwards of 44,000 encrypted passwords (many of which were weak and easily crackable) have been publicised. Subsequent reports suggest that up to 3.3million client email addresses are to be made public in weeks to come (a spammer's dream!).

CSIRT response

Janet CSIRT responded to the threat by proactively alerting designated security contacts at affected sites and working with them to change passwords and inform users.

STRATFOR who?

STRATFOR Global Intelligence publishes daily bulletins regarding international affairs, defence and intelligence matters from around the world. Government departments and industry have become reliant on them for impartial analysis and have shared supposedly sensitive information in the past. So as a target for data theft they rate very highly.

This incident demonstrates the importance of having up-to-date security contacts. To update your security contacts or for further advice contact Janet CSIRT on 0300 999 2340 or irt@csirt.ja.net 

MOONSHOT AND RESEARCH USE CASE

Janet's customers already enjoy the benefits of federated access management to web-based services through the UK Access Management Federation, and to WiFi networks across the world through eduroam. Both systems employ simplified single sign-on using credentials issued by users' home organisations.

The Moonshot technology, developed by Janet in collaboration with other UK and international partners, brings the benefits of single sign-on to a diverse range of other use cases.

Responding to demand from service providers within the research community, Janet has worked to identify their most urgent use cases for Moonshot. These include:

- Reducing operational costs by mitigating the need to issue users with service-specific credentials or to operate a special-purpose authentication system
- Increasing the usability of services by enabling users to authenticate using the credential issued by their home organisation.
- Enabling service providers to reduce the number of authentication systems needed to authorise access to their services

- Facilitating the delivery of services to a broader range of potential customers by reducing the costs associated with identity management
- Controlling access to information about users, enabling more precise management of users' authorisations to the service and its presentation.

In October 2011 Janet launched a Moonshot technology pilot, which aims to enable a number of service providers from the research community to explore different ways they could use Moonshot. Organisations such as the Science and Technology Facilities Council (STFC), Diamond Light Source and Cancer Research UK are taking part in the Moonshot pilot. In tandem the technology is currently undergoing standardisation within the Internet Engineering Task Force.

Visit www.project-moonshot.org for project information, read the Moonshot blog and keep in touch with developments.

A persuasive demonstration of Moonshot's potential is the recent success in natively integrating the technology within Microsoft Windows, enabling federated authentication within Microsoft Outlook, Microsoft Exchange, Microsoft Internet Explorer, Microsoft Windows Active Directory Services and other Windows software.

This strongly indicates that the technology has significant potential to support the delivery of corporate IT services using shared service or Cloud-based delivery models.

Early indications suggest that Moonshot could fill an unmet need within the research community. We continue to work with participants to explore the use cases for Moonshot. Participants have kindly given feedback on Moonshot.



SCIENCE AND TECHNOLOGY FACILITIES COUNCIL (STFC)

Potential usage
STFC is testing the Moonshot technology's suitability as a complementary authentication system to the existing mechanisms currently used within the National Grid Service, operated by STFC.

"Moonshot has the potential to significantly reduce our operational costs and improve the usability of the services that we deliver to the UK research community by allowing users to use their familiar home organisation credentials."

Dr Peter Oliver, Group Leader at the STFC's e-Science Centre



CESNET

Potential usage
CESNET, the Czech academic network, is exploring Moonshot's potential to facilitate access to distributed storage systems used by the Czech research community.

"Researchers want to share data easily and securely across organisational boundaries, but contemporary security technologies often fail to meet this requirement. Moonshot will provide easier access to storage systems, where users utilize their home identities to access file systems provided by other institutions."

Daniel Kouril, Senior Researcher, CESNET



DIAMOND LIGHT SOURCE

Potential usage
Diamond Light Source, the UK's national synchrotron facility, needs to provide convenient, transparent and secure access to users from the global research community.

"We are currently piloting the use of the technology to complement the PANDATA project that seeks to provide single sign on support to uniquely identified scientific investigators across Europe. Moonshot could enable these experimenters to use one set of credentials to interact directly with the facilities' data acquisition and analysis systems to further their cutting edge research."

Bill Pulford, Head of Data Acquisition and Scientific Computing at Diamond Light Source



CANCER RESEARCH UK

Potential usage
Cancer Research funds the work of over 4,000 researchers, doctors and nurses working at a number of organisations throughout the UK. A system that allows teams across the UK federated access to project files would enhance the work of Cancer Research.

"Our projects and datasets tend to have a strong collaborative element, with teams from different organisations working together. A service that could federate access to storage or computational resources would be very welcome, and one which had wide uptake by the UK academic community would be of particular interest."

Peter MacCallum, Head of IT & Scientific Computing at the Cancer Research UK Cambridge Research Institute



COOKIES WRITE YOUR RECIPE

Does your website use cookies? Most do – to remember what options the user has chosen, whether they have logged in or what they have placed in their shopping basket. Many also use cookies to analyse how visitors use the site. New European cookie regulations became UK law in 2011; by May 2012 the Information Commissioner expects websites to have at least a realistic plan on how the regulations will be implemented.

The rules are simple: sites must provide "clear and comprehensive information" about all cookies. For cookies that aren't needed to provide a service the user has requested, the site must also obtain the user's consent. For many cookies – mostly those that directly benefit the user – it is clear how to do that, but for others – especially those that mainly benefit the website operator or someone else – it isn't.

We expect websites to let us do things like saving preferences, zooming in and out of maps, logging in to a personal account and placing goods in shopping baskets. To do this, the website has to remember things from one page to another, usually by storing a cookie in our browser. The Information Commissioner's guidance – and the example provided by his website – is that these cookies just need to be described, for example in a table linked to the site's privacy policy. If a cookie is used for a particular function – for example to save preferences or view a video – the page where the user chooses that function should make clear beforehand that it requires a cookie.

You should plan to identify what cookies your website uses and to describe them. Sites and cookies that involve the most risk to a user's privacy should be identified and prioritised first.

The guidance on how a website deals with cookies that do not directly help the user is not so clear. These include cookies for analysing website use and those used to display advertisements. These may have an indirect benefit to users – the website may be improved by analysis or funded by adverts – but they aren't services that the user has requested. The law says users must actively consent to the storage of these cookies. As well as describing the

cookies, you must somehow get visitors' permission for them.

If a site has an obvious entry point – such as a login page – then that page could ask visitors to agree to the cookies used by the site. If no login is required this doesn't work as the first page a visitor sees could be anywhere on the site. The Information Commissioner's site now deals with this by having a consent tickbox at the top of every page, which only disappears when the visitor chooses either "yes" or "no". No analysis cookie is stored until the user clicks "yes".



To implement this consent system you need to know how to turn off the cookie. If you write your own analysis or advertising system that isn't a problem, but most websites use other people's code – for example the Information Commissioner uses Google Analytics. If that code doesn't already support a consent system then it may be difficult or impossible to add one or to keep it up to date as the system is upgraded. And if you use more than one system then you somehow have to get individual consent for them all without filling the

screen with tickboxes. So far no one has shown how to do that.

People writing analytic and advertising packages could add consent options to them. The advertising industry has tried to do this, but European authorities disagree on whether the result complies with the law. Google Analytics has a "blocker" that users can download but this shows that consent has been refused, not that it has been given: which is the reverse of what the law requires.

Even with a lawful system, and an assurance that the analysis cookie is a very low threat to privacy, most visitors to the Information Commissioner's site do not give consent. Presumably they see no reason to do so. If visitors to other sites behave similarly then web analysis results are likely to change a lot: the Information Commissioner's recorded visitor numbers dropped by nearly 90%.

If you rely on analysis to improve your website, or on advertising to fund it, you should be encouraging your providers to develop systems that comply with the law and make visitors feel their privacy is safe. And you should probably develop a strategy in case that turns out to be impossible.

Apart from this area of uncertainty, most of the requirements are now clear. Sites will need lists of cookies and their purpose, as well as notices about particular website functions that need them. Developing those, while keeping an eye on your third party cookie providers, seems like a realistic plan. UN

Information about developments in cookie law can be found at <http://webmedia.company.ja.net/edlabblogs/regulatory-developments/tag/cookies/>

IP version 6 (IPv6) is the new version of the Internet Protocol, the common protocol underpinning all Internet communications. It supersedes the current version, IPv4, in order to accommodate the rapid expansion of the Internet.

SPOTLIGHT ON IPv6

With the growing number of people accessing the Internet from all types of electronic devices, both mobile and fixed, there is a need to ensure that adequate address space is available. IPv4 will not be able to accommodate this growth, and as a result IPv6 was developed by the IETF (Internet Engineering Task Force) during the 1990s and offers 3.4×10^{38} addresses.

IPv4, with its 32-bit addressing, can address fewer than 4.3 billion devices, far short of the seven billion people on

the planet! Bridging the 'digital divide' requires an addressing system that can cope with the requirements of the growth of the Internet into regions where its penetration is still low.

The current situation

On the 3rd February 2011 the Internet reached an important milestone when the Internet Assigned Numbers Authority (IANA) assigned their last remaining IPv4 address blocks to the five Regional Internet Registries (RIR). This means that the future expansion



of an open Internet with any-to-any connectivity now relies on the successful deployment of the new version of the Internet Protocol, IPv6.

As the pool of available IPv4 addresses runs down, Internet Service Providers such as Janet (also called 'Local Internet Registries' or LIRs in IP allocation terms) have only been able to obtain IPv4 addresses for a much smaller planning horizon. A couple of years ago, ISPs could obtain addresses based on a justification of use two

years in the future: at the moment addresses can only be obtained based on what will be used within the next six months. Once the RIR in our region, RIPE, reaches a certain limit towards the middle of 2012, Janet will only be able to obtain one more small address block, regardless of our requirements. The RIR for the Asia-Pacific region, APNIC, reached this position in April 2011, and the other RIRs are forecast to reach this stage within the next two to three years. Janet is currently allocating addresses from its final large

address block and does not expect to get any further blocks from RIPE NCC.

Business planning and IPv6

IPv6 offers strategic benefits for service continuation and growth. The future growth of the Internet relies on IPv6 and any business that uses the Internet as part of its operations will suffer if IPv6 is not deployed. In the short term, there may be an increase in training requirements and possible procurement of equipment and licence upgrades. However, the impact of not

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making your organisation IPv6 ready far outweighs this cost. Within the Janet community, the Internet is used for teaching, research and simple communications with friends and family. The job of attracting overseas students to study in the UK will be much more challenging without IPv6!

To put the current situation into context, there are now international students, especially from the Asia region, who may be trying to access your electronic content from networks that only have native IPv6, and all IPv4 access is through Network Address Translation (NAT). This situation will become more common, until it is eventually the norm for both domestic and international students. Any educational institution wishing to attract international students may struggle to do so without sufficient IPv6 capability on its public-facing services. So, any academic institution looking to receive good international rankings must consider how well their ICT strategy is aligned to the benefit of international students.

In simple terms, if your public-facing services do not support IPv6, then the only devices that can communicate with you will be those with legacy IPv4 addresses. You will be hidden from a rapidly growing proportion of the world that is using IPv6 only devices. It makes business sense to begin deployment earlier rather than later. Ironing out all the deployment gremlins will pay for itself and you will avoid the intangible costs that no (or relatively late) IPv6 deployment would bring.

IPv4 address stocks

Owning a plentiful supply of your own IPv4 addresses will not be able to solve anything – you will still be hidden to IPv6 only users, or their access to your services may be limited by multiple layers of network translation. Therefore, to avoid



World IPv6 Day

To further underline the timeliness and importance of IPv6 deployment, on 8th June 2011, a "World IPv6 Day" event was held, sponsored by the Internet Society. The event consisted of several large content providers and industry players enabling IPv6 on their main websites to discover if deploying IPv6 caused problems, and if so, for what percentage of their users.

Over 400 organisations including Facebook, Google, Yahoo, Microsoft, AOL, BBC, Cisco and Juniper took part in the event. The day was hailed as a success by many of the content providers.

On Janet, we noticed a considerable increase in IPv6 traffic, as some of the few Janet customers that have limited deployments of IPv6 were able to use it to reach the World IPv6 Day participants. That increase persisted as some of the participants left IPv6 enabled.

– STOP PRESS –

World IPv6 Launch. Many major ISPs and web companies have now agreed to permanently enable IPv6 for their products and services by 6th June 2012. <http://www.worldipv6launch.org/>

unnecessary risk to reputation, organisations must start to deploy IPv6.

UK Government position

There are other strategic reasons for timely IPv6 deployment, including directives from the UK Government. For example, the Cabinet Office has defined an e-GIF (e-Government Interoperability Framework) policy outlining the gradual migration to IPv6, while maintaining its co-existence with IPv4. Their advice for new IT infrastructure procurements is to support the co-existence of IPv4 and IPv6 networks and to procure dual IPv4 and IPv6-enabled products when it is cost-effective to do so:

"The e-GIF policy is for a gradual migration to IPv6, maintaining coexistence with IPv4. Our advice for new procurements is to support coexistence of IPv4 and IPv6 networks and to procure dual IPv4 and IPv6-enabled products when it is cost effective to do so."

Further details can be found at: <http://interim.cabinetoffice.gov.uk/govtalk/schemasstandards/e-gif.aspx> The European Commission (EC) also has set out clear IPv6 goals with the EC Information Society issuing an action plan, as part of the Lisbon strategy, which aims "to achieve widespread IPv6 implementation in Europe by 2010".

IPv6 Deployment Strategy

There is no one size fits all strategy, but based on feedback from previous deployments in academia; there are five points to consider for IPv6 deployment.

1. Form an IPv6 project team.
2. Engage all relevant IT teams and share the workload.
3. Establish a test environment.
4. Audit existing IT infrastructure and services.
5. Ensure IPv6 is mandated in future IT procurements.

The three phase strategy for IPv6 deployment

1

Planning phase

- Form a core project team.
- Determine staff IPv6 training requirements.
- Get senior management approval and earmark funds for IPv6 training and IPv6-related network updates in your 2012 IT budget.
- Take an inventory of the hardware and software you use and identify which devices and software you will have to update to support IPv6.

2

Testing phase

- Use this phase to iron out unforeseen technical issues such as interworking of various systems and perhaps issues from fragmented IT groups across your organisation.

3

Deployment phase

- Prioritise public-facing services first such as website and email servers.
- Enable internal services and ensure internal user workstations are IPv6 enabled so that staff can access the intranet and Internet using IPv6.
- Monitor IPv6 usage. You can expect adoption to be slow at first but through regular monitoring, you will be able to report on uptake.

Janet IPv6 Links

Janet IPv6 webpage

<http://www.ja.net/ipv6>

IPv6 Fundamentals course

<http://www.ja.net/services/training/courses/ipv6.html>

Janet IPv6 Technical Guide

<http://www.ja.net/documents/publications/technical-guides/ipv6-tech-guide-for-web.pdf>

Edlab Learning Objects

<http://www.ja.net/services/training/edlab.html>

Other Useful Sources

Internet Protocol Specification

<http://www.rfc-editor.org/rfc/rfc2460.txt>

IPv6 users list

<https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=ipv6-users>

Community IPv6 Website

<http://www.ipv6.ac.uk/>

6Deploy website

<http://www.6deploy.org/>

RIPE Act Now website

<http://www.ipv6actnow.org/>

6UK Website

<http://www.6uk.org/>



EVENTS & TRAINING CALENDAR



EVENTS

Prepared for your impending move to the cloud?

Thursday, 9 February 2012

One day conference being held at CCT Venues – Smithfield, London, EC1A 4PT

Aim

This is a strategic-level cloud and data centre conference for research and education institutions considering a move to the cloud. The conference covers:

- how to lead a successful move to the cloud
- the business case for virtualisation
- making cloud pay for itself
- security of academic data
- procuring cloud and data centre services
- HE and FE case studies

To find out more and to book your place go to: www.janetbrokerage.ac.uk

Workshop 40

3-5 April 2012 at The University of York

Workshop is the **must attend** technical conference of the year for staff in education and research providing:

- an in-depth programme addressing key concerns for the sector with experts presenting and running workshops on security, network access, cloud and data services
- the opportunity to network with over 250 peers in institutions facing the same challenges
- over 40 specialist IT suppliers exhibiting throughout the conference. Note the exhibition was fully booked before Christmas.

Online delegate bookings can now be made.

To find out more and to register go to

<http://networkshop.ja.net>

Book now to take advantage of our early bird discount. The early bird discount is available until 17 February 2012.



TRAINING

Janet runs a portfolio of one-day courses specifically written for the Janet community and delivered by experts working in UK education. Our high quality courses give you a chance to train with colleagues working in a similar environment. Courses are scheduled at locations across the UK throughout the year, and can be commissioned to run at your organisation.

Computers, Privacy and the Law

February 7th, London;
April 2nd, York

Computers, networks and databases can be very damaging to the privacy of individuals whose information is contained in them. On the other hand these same technologies can also significantly enhance our privacy by processing only the information they need, rather than the unnecessary information that, in the real world, often comes along with it.

This course aims to help you find the right balance, first looking at the kinds of activity that are viewed as intruding on privacy, and then the circumstances in which it may be necessary and acceptable to do so. A number of tools and techniques are discussed that can improve privacy while still getting the job done, and protecting both your users and your systems.

Hands on Digital Forensics

February 8th, London

This course covers lots of different aspects of digital forensics, from incident response and imaging computers, through to capturing volatile data. The practical focus is on the use of open source tools and how you can apply these in your organisation.

Basic Networking

March 8th, Bristol

The main objective of this course is to provide delegates with a basic understanding of computer network technologies and concepts. Throughout the course, delegates are given practical exercises and are shown demonstrations.

Basic Router Configuration

March 9th, Bristol

Routers play a major role in any network and their effective configuration is vital in ensuring they run efficiently. The objective of this course is to provide a basic understanding of the configuration of network devices.

Starting with the basics, this course will provide an overview of network devices and components. Delegates will have an opportunity to get hands-on experience in logging on to equipment and using configuration files.

The course will look at the configuration of DHCP, NAT and PAT. Delegates will then work through some solutions to network security issues. The day will end with an opportunity to carry out further configurations on a router.

IP Fundamentals

March 20th, Manchester

Looking at Internet Protocol in detail, this course covers the basic principles of operation down to the actual data transmitted, with an emphasis on operation over Ethernet.

Prices

Cost (per delegate per course, excluding VAT):

Primary Connected Organisations: £200

Other sites: £300

Discounts are available through the Janet Training Credits Scheme.

For online booking, venue information and full course overviews please go to www.ja.net/training



EXTERNAL NEWS

A summary of links to key news sources.
Janet aims to keep you up-to-date on key developments, news and important information.

Funding council issues indicative set of funding allocations to university sector
http://www.sfc.ac.uk/news_events_circulars/mediacentre/press_releases/2011/PressReleases_SFCPR202011.aspx

£158 million investment in e-infrastructure to power growth and innovation
<http://bit.ly/wV7E54>

New Initial Teacher Education projects – advanced notification of a call to action
<http://www.isis.org.uk/AboutLSIS/MediaCentre/NewsArticles/Pages/New-Initial-Teacher-Education-projects%E2%80%933-advance-notification-of-a-call-to-action.aspx>

Teaching finding and student number controls consultation outcomes
<http://www.hefce.ac.uk/news/hefce/2011/outcome.htm>

Cities growth plan unveiled
<http://www.scotland.gov.uk/News/Releases/2011/12/16113842>

HEPI Director discusses the new incentive scheme that UK universities are using to attract high quality student
<http://www.hepi.ac.uk/478-2020/in-a-recent-article-for-the-telegraph-hepi-director-discusses-the-new-incentive-scheme-that-UK-universities-are-using-to-attract-high-quality-students.html>

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AT THE UNIVERSITY OF YORK

40

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Networkshop 40 3–5 April 2012

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Networkshop will give you the perfect opportunity to:

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- share and learn from others
- improve and update your technical knowledge
- meet experts from Janet and industry.

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Book now and secure your place at:
<http://networkshop.ja.net/>

BOOK NOW!

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CUSTOMER ENGAGEMENT TEAM



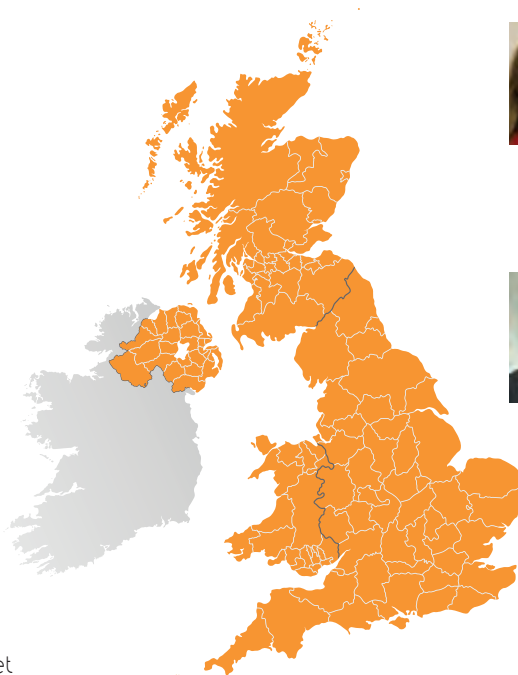
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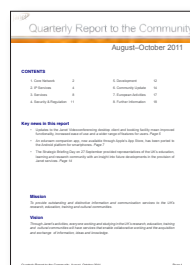
RECENT PUBLICATIONS



How Janet can support your needs available at: <http://www.ja.net/documents/company/why-janet.pdf>



Janet Report: <http://www.ja.net/documents/publications/reports/janet-report/report2011.pdf>



Quarterly Report Aug-Oct available at: <http://www.ja.net/documents/publications/reports/quarterly-reports/quarterly-report-11.pdf>



IPv6 Technical summary for network managers available at: <http://www.ja.net/documents/development/ipv6/ipv6-techsummary.pdf>



Guiding the way to the cloud available at: <http://www.janetbrokerage.ac.uk/info/cloud>



Cloud Email – A guide to staff and student cloud email systems available at: <http://www.janetbrokerage.ac.uk/info/research>



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