

JANET NEWS



READY FOR CLOUD
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Infrastructure Services Manager,
Nottingham Trent University
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janet



CEO Welcome

As the pace of technology change increases it is often a challenge to be able to pause, take stock and review where

we are. There is no doubt, however, that from time to time it pays dividends to stop and reflect. When we do make the space to do this, it presents us with the opportunity to recognise the efforts of our team which are so easily taken for granted. Most importantly, however, it also allows us to see the benefits that our products and services are able to deliver to customers.

By the time you read this, the migration of our new network, from SuperJANET5 to Janet6, will be almost complete. This has involved over three years of diligent work by the Janet6 project team, together with our partners Ciena, Imtech, Juniper and SSET. I would like to extend my thanks to everyone involved in this major project. It is truly a success for a large publicly funded IT project to come in on-time, to specification and within budget – a major achievement by all concerned! The new state-of-the-art Janet6 network will offer the UK research and education community a big competitive advantage. Proof of its success will be

demonstrated through the new innovations, discoveries and opportunities that, ultimately, will benefit us all.

Many of you will have had interactions with our Network Operation Centre in London. To support the new Janet6 network and provide extra support, we welcome Tim Robinson, Rob Clarke, Michael Robson and Anthony Ryan, who will be establishing our new Network Operation Centre in Manchester.

As we move forward into the new academic year with the new joined-up Jisc, the benefits of these changes, driven by Sir Alan Wilson's review, are already becoming evident. We now have a much more integrated access and identity management operation, and as people in the new organisation get to know one another better, new opportunities for efficiency and synergy arise each day.

We go forward with optimism and purpose in our new group to deliver effective and relevant services to all our customers.

Tim Marshall, CEO, Janet & Executive Director of Technology and Infrastructure, Jisc



Editorial

As we start the academic year with the new Janet6 network, it's clear that technology innovation can have

a significant impact within an organisation. Our new Telephony Purchasing service (pg3) and Live online learning service (pg 13) are examples of how technology can help you save money and act as an enabler, whilst Amanda Ferguson talks about the benefits of deploying a cloud solution at Nottingham Trent University (pg 10-12).

If you attended Networkshop41 in April in Keele, or the TNC Conference in Maastricht

in June, you may remember our LOLA demonstration. The use of LOLA has potential far beyond such musical demonstrations and on pg34-35 we outline what you'll need to get started.

Identifying the next game-changing technology is a key area for our Strategic Technologies team. In the next few issues of Janet News, members of our ST team will talk to you about areas that you should keep an eye on, starting with Pervasive Access (pg32-33).

Dan Perry, Director, Product and Marketing, Janet

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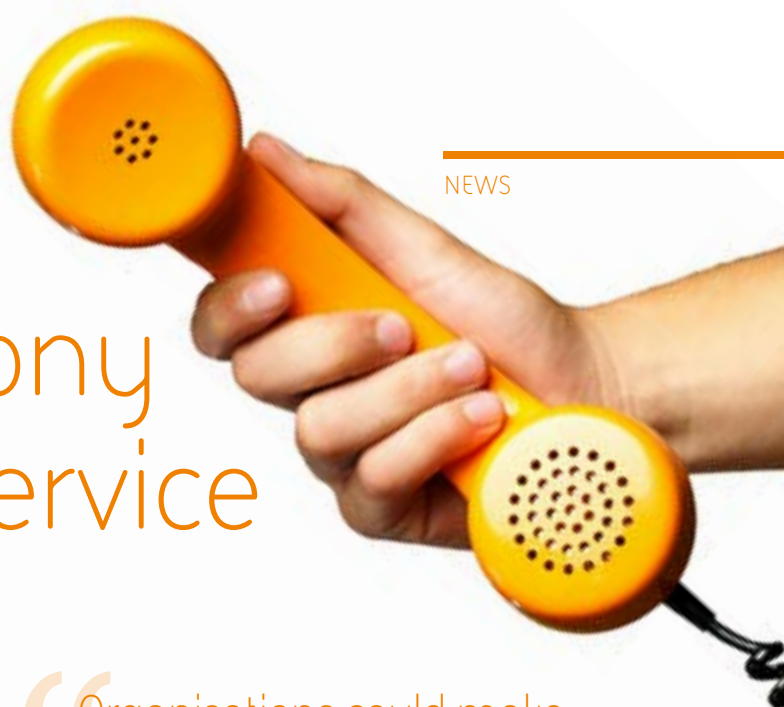
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Janet Telephony Purchasing Service



With IT and operations budgets under pressure, all fixed costs are being scrutinised to ensure value for money for an organisation. One area that has come under the microscope is the cost of telephony services, particularly the cost of calling mobiles from a landline, which is often one of the largest elements of telephone bills.

Janet is creating a Dynamic Purchasing System that will enable organisations to buy telephony services and equipment through pre-approved and Janet Connected Telephony Suppliers. The system will not limit the types of equipment or services that can be bought and could include SIP trunks, ISDN circuits, mobile telephones and services, hosted PBX solutions and onsite telephony equipment.

Real business benefits and reassurance for you

Not only could you save money by using SIP trunking technology to carry your landline telephony traffic instead of using a traditional ISDN supplier, but you could also save approximately two months of procurement time if the EU procurement process is managed internally. You can be reassured that the service has pre-approved compliance to EU regulations.

All suppliers that are registered to sell via the Janet Telephony Purchasing Service will also be resiliently connected to Janet with at least 1 Gbit/s in two geographically separate locations on the Janet backbone.

What's a Dynamic Purchasing System?

The Dynamic Purchasing System, unlike traditional purchasing frameworks means suppliers can enter and leave the service at any point. This will enable new suppliers and technologies to be made available during the four-year lifetime of the Dynamic Purchasing Service. We believe that this will encourage innovation and drive down costs for the community.

“Organisations could make significant savings to the cost of calls from their landlines to their own mobiles”

An example of where organisations could make significant savings is in the cost of calls from their landlines to their own mobiles. By purchasing landline and mobile services from the same supplier through the Janet Telephony Purchasing Service, all calls made from mobile and landline environments within the organisation would be free.

Progress to date

We have a number of suppliers interested in the Janet Telephony Purchasing Service. The first two in place are Gamma and InTechnology, and we are now also working with Voicenet to get them connected to Janet.

For more information on the Janet Telephony Purchasing Service, please contact Roger Bolam by emailing roger.bolam@ja.net

Other telephony developments

Customer feedback has indicated that poor, or in some cases non-existent mobile phone coverage on campus continues to cause communication problems. We are currently working to understand how we can help improve your mobile telephone coverage without incurring the high costs associated with traditional mobile telephony network infrastructure. Technologies such as femtocells may play a part in this, as customers can make use of their Janet connection to extend the reach of a mobile telephone network footprint.

Look out for an article on Unified Communications in Janet News 23.

Janet6

– the network is launched

The Janet6 network has now been delivered, installed, commissioned and accepted, a year after contracts were signed with our two key suppliers, Ciena (for optical transmission equipment) and SSET (for a UK-wide fibre infrastructure).

Following key milestones in May 2013, when we saw first light on the network, and in June 2013 when we observed the first packets flowing, we now have a fully working state-of-the-art optical transmission network. This has all been made possible as a result of 12 months of hard work by the Janet project team and the respective project teams of our suppliers.

On completion of the final commissioning of the optical transmission infrastructure, Janet engineers immediately began putting the network through its paces by testing circuits and establishing traffic flows between core routers. The flexibility, agility and enormous potential that the Janet6 network will offer the UK research and education community was reinforced during the testing phase. In preparation for

“Building Janet6 is a fantastic achievement and we are very proud of the part it will continue to play supporting UK research and education.”

Jeremy Sharp, Head of Strategic Technologies

“The Science and Technology Facilities Council (STFC) operates large-scale science facilities and supports science programmes for the UK research communities to deliver world-class research and innovation. This activity is highly data intensive and whether using the Janet IP Service or the Janet Lightpath Service, the requirement for a robust, resilient and extensible national network is fundamental for STFC to maximise its impact for the benefit of the UK and its people.”

Dr Robin Tasker, Head of Networks and Communications, STFC, Daresbury Laboratory

migrating regional networks from SuperJANET5 to Janet6, we also went through a process of completing cabling at core PoPs and the connection points to Janet regional networks and configuration of the IP and management networks.

Seamless migration to Janet6

The migration process began in July 2013 when the Aberdeen regional network was successfully migrated to Janet6 by Janet engineers with no interruption to service for any institution in that region. The migration progressed to plan and was completed by the end of September, ahead of the 23 October contractual end date for SuperJANET5.

Janet Cloud and Data Centre framework in action

Across the Janet community, IT departments face an unprecedented number of challenges related to updating their IT infrastructure. Solutions offered through a cloud provision model, combined with on-campus provision, offer real benefits, keeping key applications and services running with no impact to students and staff whilst providing scalability and constraining costs.

The Janet Cloud and Data Centre framework is made up of eight suppliers selected specifically for the research and education sector.

Using the framework gives you:

- Help from Janet to fully understand your requirements and effectively secure the solution
- Impartial advice and assistance from Janet throughout the process
- Advice on any additional connectivity requirements you may have
- Access to expert advice and guidance from the Janet procurement team during the process and ahead of preparing tender documentation
- Fully managed communication with suppliers on your behalf and service level reassurance
- The opportunity to speak to other similar organisations who have gone through the framework process
- Established terms and conditions so no negotiation of contract terms is required
- A prepared contract template to reduce internal time and effort
- Support during the evaluation process and help to ensure that you have a complete audit trail

To help the community benefit from these opportunities the Janet Cloud and Data Centre framework was introduced. The framework consists of eight suppliers specifically selected for the research and education sector. As a fully compliant EU procurement framework it has been designed to save you time and money, whilst offering access to leading providers.

Nottingham Trent University (NTU) recently addressed these challenges when considering whether cloud computing would offer the flexibility they were looking for. NTU used the framework and with support from Janet staff and our supplier capability days, worked through the options available in order to find the solution that would best meet their needs. You can read more about Nottingham Trent's cloud journey in this issue (pg 10).

Other organisations including HEFCE are now realising the benefits of using the Janet Cloud and Data Centre framework with impartial support from Janet throughout the process.

“We wanted to run a competitive procurement making best use of any appropriate frameworks, so for those reasons we chose the Janet Cloud and Data Centre framework. The Janet team supported us through the process, which enabled us to run an effective mini competition, allowing for the contract to be awarded on time and within budget.”

Julie Manning, Procurement Advisor, HEFCE

Find out more about the Janet Cloud and Data Centre framework at <https://www.ja.net/products-services/janet-cloud-services/cloud-and-data-centre-framework>

Enlighten

Your Research Global (EYR Global)



EYR Global has evolved from an annual competition conducted by SURFnet in the Netherlands over the last four years. The aim of the original competition was to promote advanced network services within the SURFnet research communities.

This year the initiative was broadened to include a wider group of NREN partners who wished to extend this concept within their communities and encourage them to make better use of NREN services to link resources within their networks.

Four additional Research and Education networks in Europe and the US joined SURFnet this year to organise a similar initiative with an international scope. ESnet, FUnet, Internet2 and Janet worked with SURFnet to establish EYR Global 2013. Partners were invited to submit proposals from

“the initiative was broadened to include a wider group of NREN partners who wished to extend this concept within their communities”

research groups to show how they might improve their research collaborations using advanced network services provided within and between the NRENs. New and existing research communities within the NREN countries were eligible to submit proposals, however research partners outside this group were also permitted to apply if their NRENs also guaranteed a similar level of resource provision.

Proposals were evaluated after the 1 July 2013 submission deadline and, following evaluation by NREN panels, seven proposals proceeded to the second stage. Authors were then asked to elaborate on their plans in preparation for the final selection process. The winners of the competition will be announced in November during the Supercomputing Conference (SC13) hosted in Denver, Colorado.

For further information on EYR Global, visit:
<https://www.enlightenyourresearch.net/>



For more information on Janet's involvement, visit:
<https://www.ja.net/products-services/janet-research/enlighten-your-research-global>

New Janet & Microsoft Strategic Agreement

As part of our ongoing work to act as an aggregation point for the creation of sector agreements for cloud-related services to education, we have now signed a Strategic Agreement with Microsoft.

Innovation through cooperation

The Strategic Agreement covers different areas of activity, including joint technical projects such as:

- data centre peering
- future agreements for Microsoft cloud services
- investigation of the development and implementation of common projects such as authentication and authorisation
- joint workshops and events on the adoption and development of cloud services

Tangible benefits for the community

Our relationship with Microsoft has already resulted in contractual amendments to the Microsoft Office 365 documentation. We worked closely with Goldsmiths, University of London; University of Leicester; University of West London; King's College London and Queen Mary's London to gather their input throughout the negotiations with Microsoft.

We are in the early stages of negotiating terms and conditions for use of the Azure Cloud Services by HE/FE in the UK and are also including other European NRENs in these discussions.

Google Apps and Dropbox

Our negotiations with Google have progressed well with most of the negotiated amendments focusing on the security and storage of our customers' data. We expect to launch the Google Apps for Education Agreement by the end of October 2013.

“It's our aim to create an environment where the Janet community feel safe adopting cloud products and services”



Tim Marshall, CEO Janet & Executive Director of Technology and Infrastructure, Jisc and Chris Parker, Senior Director, Law and Corporate Affairs, Microsoft signing the Strategic Agreement.



Left to Right: Tim Marshall, Janet, Liz Bromley, Registrar and Secretary, Goldsmiths, University of London; Basem El-Hoddadeh, Director of Information Technology, Goldsmiths, University of London; Chris Parker, Microsoft.

We've also begun negotiating with Dropbox for Business and hope to have a sector agreement in place by the end of 2013 or early 2014.

It's our aim to create an environment where the Janet community feels safe adopting cloud products and services, whilst maintaining our position as an impartial trusted advisor/supply route for such services.

The Janet community can take advantage of the Cloud Services for Education Agreements for a fee of £500 for one year's access to the negotiated amendments and ongoing maintenance of this documentation on your behalf, thereby ensuring continued delivery of terms and conditions beneficial to us all.

For more information about our Cloud Services for Education Agreements, visit <https://www.ja.net/products-services/janet-cloud-services/cloud-services-education-agreements>

1-3 April 2014



UNIVERSITY OF LEEDS

NETWORKSHOP **42**

As the UK's premier research and education networking event, Networkshop42 offers a unique opportunity to present and discuss technical and practical aspects of providing advanced network services and applications to the research and education community in the UK.

Experts from within the Janet community and further afield will be presenting on the issues that affect you along with seminars and discussion groups.

The subjects below are just a few of the topics that are likely to be of interest to you:

- **Security** - Information Security Management, Incident Response, Intrusion Detection
- **Mobility** - Bring Your Own Device (BYOD), Wireless, 4G, Network Access Control
- **Access and Identity Management** - Authentication, Authorisation and Access, eduroam, Moonshot, UK federation
- **Campus Networking** - IPv6, Cabling, Offsite Connectivity, Resilience, Management Systems
- **Supporting research**

- **Unified Communications** - Videoconferencing, Telephony
- **Outsourced services** - Cloud, Outsourcing, Shared Services, Datacentres
- **Regulation and law**

In addition to experts and users from the research and education community, Janet staff will be presenting details on a number of our current services and future activities, as well as providing seminars, lightening talks and Birds of a Feather sessions.

Who should attend

The event brings together expertise from all fields of networking by providing a forum for technical updates and discussions on current and developing technologies.

Networkshop42 is aimed at network managers and technical staff from the community, as well as professionals interested in networking and network-enabled services in the research and education sector.

Networkshop42 will provide you with the ideal opportunity to learn more about technical issues relevant to your sector and to network with your peers.

For further information, please visit: <https://networkshop.ja.net>
Follow us on Twitter @uknetworkshop or use #nws42

Janet txt

launches online SMS top up service

PageOne are pleased to announce the launch of a new online top up feature, allowing users of the Janet txt service to add SMS credits to their account in a matter of minutes.

Available 24 hours a day, seven days a week, the new online top up feature provides users with an easy and convenient mechanism to purchase additional credits. Furthermore, the new feature also offers the reassurance that users can access additional messages in time-critical or emergency situations.

Supporting Business Continuity Planning

The use of SMS has extended far beyond appointment reminders, notification of lecture room changes, and marketing campaigns to form a key element of an organisation's business continuity plan. From adverse weather conditions to power outages, fire and flooding, text messaging can play a valuable role in warning, informing and instructing both staff and pupils in an emergency situation. The new online top up service gives customers better control, flexibility and the assurance that they can rely on the Janet txt messaging service even in the most demanding circumstances.

Nigel Gray, Sales Director at PageOne Communications, said, 'Customers are truly at the heart of our innovations and inspire our thinking. We have listened to their feedback and enhanced elements of the Self Provisioning Tool to ensure our customers have the means to message their staff and pupils, when they need it most.'

In addition to the low SMS credit alert, users can also keep track of their SMS purchase history and SMS credit balance through the new and improved Self Provisioning Tool.

Greater control with the Self Provisioning Tool

Designed to give administrators even greater control, the Janet txt Self Provisioning Tool includes a range of feature-rich services allowing users to manage their own accounts.

From creating and deactivating users, to modifying a username or password and constructing SmartGroups, the Self Provisioning Tool offers administrators an enhanced user experience.

For more information on the Janet txt service, the new online top up feature or the Self Provisioning Tool, contact the Janet txt team on 0844 822 5100 or email janettxt@pageone.co.uk.





INTERVIEW:

NOTTINGHAM
TRENT UNIVERSITY 

gets ready for cloud



As Infrastructure Services Manager at Nottingham Trent University (NTU), Amanda Ferguson knows all too well how changing times, technologies and requirements increase the demand for smarter network capabilities. With 28,000 students across three campuses, including 4,000 distance-learning students around the world, the need for instant accessibility and second-to-none data storage is ever expanding.

So, how will NTU meet these demands? And, also, reduce its carbon footprint along the way? We spoke to Amanda to find out how the future looks in a cloud world.

Amanda, tell us a little more about the size of NTU and your role as Infrastructure Services Manager.

NTU has 3,500 professional and academic staff members, and 28,000 on-campus students including 4,000 distance-learning students. We have campuses in Brackenhurst, Clifton and in the heart of the City of Nottingham. Our distance-learning students are as far and wide as Australia and Indonesia.

I joined NTU, at the City campus, in January 2009. My team and I manage the entire data centre infrastructure and networking,

“Janet’s pre-tendered framework saved us a huge amount of time”

both fixed and WiFi. I am also part of the management team in the NTU Information Systems Department.

What’s your current infrastructure environment like?

We currently use HP XP 24000 SAN and a range of HP Blade servers. These are spread over the City and Clifton sites. The cost of these, nearly five years ago, was around £3.5million.



“Students no longer just have laptops – they have all sorts of devices, and expect the same network capability across all of them.”

How do you plan to achieve your objective of 'Delivering high quality, cost effective, green IT services in an agile manner, supporting NTU strategic plans'?

Our existing environment has a limited life span – five years is a long time. As things start to fail, it's far more cost-effective to replace than fix them. With a number of servers running on a 'virtual' one, our carbon footprint is getting smaller and smaller and we're proud to be able to say we're currently in the top ten of the 'Universities Green League'.

By having fewer servers we reduce our heat output, and that means we've reduced power consumption and heating/air conditioning by 40 percent.

So, does this mean you're on track for your aim of a 48 percent carbon reduction by 2020?

I'm pleased to say we are. There have been industry changes around data storage and we have a university-wide information management initiative, which encourages people to stop keeping things 'just because they can'. This means less data, which has a positive green effect.

| Universities Green League 2013: <http://peopleandplanet.org/greenleague>



The biggest challenge we face is getting the balance between finding ways of being more effective and efficient, while still offering our students more. After all, they come first.

Are student expectations the driving force behind the changes you're making to your current infrastructure?

Absolutely. The students' expectations are increasing – they are becoming much more vocal and we have to respond to this. The student experience is paramount to us. Three years ago, they would bring a laptop into university. Now they have all sorts of devices – tablets, smart phones, etc. They expect WiFi, so we have implemented it, and expect to improve it over time.

As we operate such a mixed learning environment now, we're expecting a huge increase in video storage, which requires more capacity. It's not just lectures anymore – we now need to accommodate video clips, access to the internet, flipped learning approaches, and more. Students expect innovation and, as a department, we need to be able to support that, with faster networks, more capacity, and upgrades to handle the volumes.



“Cloud enables us to meet the demands of a far more responsive and flexible service”

How does cloud fit into this picture and what benefits will it offer?

We need to make sure we can take advantage of any opportunities that make it easier to run our business. Cloud helps us to be more responsive as a service. During busy times (enrolment, etc.) we still have to be able to offer the same flexible service. Before cloud, we had to have all the capacity in-house – which cost money. Now, at times when I need more capacity, I can move less important things to cloud and then bring it back again. It allows us to use our resources more efficiently and still respond to any pressing business changes.

What research did you do to understand cloud?

I did lots! Some of the software currently available is not scaled for us yet as, in business terms, we're an SME. There were concerns about security measures making access difficult, and we needed access to be as quick and easy as possible – both on and off campus. We have 9,000 desktops for students and staff and each student has, maybe, three devices – with 28,000 students that's a lot to try and protect! So we focus on data, not device protection.

I see more and more use of cloud for the university's activities. At the moment we archive things internally, but there's a big push from research councils for universities to make grant funded information publicly available. Long-term, as the industry develops, storage will become cheaper, which will benefit us immensely as it will be far more economical to do it externally.

How has the Janet Cloud and Data Centre framework helped you with your plans for the future?

The Janet Cloud and Data Centre framework has really helped a lot. We were looking at a complex EU procurement but Janet's pre-tendered framework saved us a huge amount of time. We started the exercise in January 2013 and made a decision in just three months. Without that framework, we'd be looking at around 14 months. And the framework covered a good cross section of the market – if not the whole market.

What difference will this strategy make to your IT infrastructure costs?

There's already been a huge difference in costs. We've spent £1.5m on infrastructure, rather than £3m – and I get more for my money! I get 40 percent more for my money now than I did in 2009.

How will you measure the success of this move?

We measure the success on carbon reduction, availability and customer satisfaction. We measure customer satisfaction at every level – we conduct student surveys at the end of every module and have monthly meetings with the student union. We're constantly monitoring feedback, which is very positive, and we understand and respond to what the students are saying. We also monitor the acceptability of our interactions with staff via the service desk portal, and service reviews by business relationship managers.

“There's a massive difference in costs – I get 40 percent more for my money now than I did in 2009”

Introducing Live online learning

Currently all Janet training is face to face, which has the advantage of bringing people together from different organisations to learn and share best practice. Increasingly, with so many work commitments, delegates are struggling to spend a whole day away from site attending training courses. In response to your feedback and to complement the off-site courses and in-house training we offer, we have launched a more flexible approach to training – Live online learning.

Live online learning

This new training option is available online, allowing you to connect from your desk and to fit training around your existing commitments. Each 90-minute session has been developed by our certified online learning facilitators (COLFs) and will run in Adobe Connect. Following the live sessions, delivered by experts from the Janet community, practical assignments allow you to practice your new skills and understand how to apply these in your organisation.

Typically a course may consist of four live sessions with three assignments. Groups remain small, ensuring that you share best practice and get to know fellow participants.

All the sessions are designed to provide skills directly relevant to networking in the academic sector, supported by a plethora of resources including documentation, syntax cheat sheets and the recorded session for you to watch again. All of these are backed up by direct access to the session trainer live and via the EdLab VLE.

“Until you have tried live online training sessions, you are more than likely going to be sceptical. However, once you have tried them, be prepared for your preconceptions to disappear”

Matt Cook, Head of Network Infrastructure & Telephony at Loughborough University and Janet Trainer

The first course, which launched during the summer, covered free network monitoring tools. Participants learnt how to configure equipment and software to sniff network traffic, analyse output, and investigate security incidents. They all left with a toolset and the knowledge of how to apply this in their organisation.

We are working on additional live online learning courses covering topics such as eduroam, freeRADIUS, information security policies, and Moonshot implementation and resilience.

We aim to provide flexible high-quality training that allows you to better exploit the network in your organisation.

To get involved in piloting any of our courses, join our Janet Community group at <https://community.ja.net/groups/janet-training> or contact us at training@ja.net





janet | ESISS

Janet enhances its security services

with information security testing and consultancy

On 1 August 2013, the Education Shared Information Security Service (ESISS) joined Janet to complement and strengthen the existing security services offered by Janet CSIRT to the research and education community. ESISS was formally managed by the East Midlands Metropolitan Area Network (EMMAN).

CSIRT are responsible for safeguarding the current and future network security of Janet and its customers. The team monitors and resolves security incidents that occur on the network, as well as providing vulnerability alerts and advice to help customers recover systems from compromise.

Janet ESISS complements Janet CSIRT by offering two additional services to the current portfolio. Automated accredited penetration testing is now delivered by the technical team, previously part of ESISS, along with bespoke penetration testing that is offered as part of consultancy services which are tailored to meet each customer's exact requirements.

'We're thrilled to bring ESISS on board – not only will we be able to share skills across the two teams, but we can provide our customers with a comprehensive security service,' said Dan Perry, Director of Product and Marketing at Janet.

'We will be looking at reconciling both teams' accreditation levels, and continuing to develop all aspects of the service. ESISS has a strong and long-standing reputation within

“I’m pleased to see that a successful HEFCE Shared Service developed by the universities of the East Midlands will continue and flourish as a national service under Janet’s stewardship.”

Ian Griffiths, Chief Executive of EMMAN and Nottingham Trent University

our community and is a good example of a HEFCE-funded initiative that has been well developed by EMMAN – we look forward to growing this further over the coming years.’

The ESISS technical team at Loughborough University has been fully integrated into Janet, providing the same high level of accredited* information security testing and consultancy as they have for the previous four years under ESISS. The services will continue to be offered at discounted education price levels suitable for FE colleges, HE and research organisations.

‘As part of the team which has lead ESISS through gestation as an idea within the East Midlands to a substantial service over the last four years, in my mind Janet is the natural home for ESISS to grow and expand in the future,’ said Matt Cook, Head of ESISS at EMMAN and Head of Network Infrastructure & Telephony at Loughborough University,

The new services are now available through Janet. Your Janet Customer Engagement Manager can advise you on your penetration testing requirements (see page 39 for the contact details for your Customer Engagement Manager).

*The ESISS team is led by a Tiger Scheme (<http://www.tigerscheme.org/>) SST (Senior Security Tester) certified senior tester. All other members of the team are currently qualified to the Tiger Scheme QSTM (Qualified Security Tester Team Member) level, and also hold a number of other IT qualifications (including CISSP, CCNA, CCNP, CCSP).

Meet the ESISS team



Niraj Kacha
IT Security Specialist



Paul Whitton
Senior IT Security Specialist

Janet ESISS Services	Service Description
Automated Accredited Penetration Testing	<p>Online web-based delivery with our fully accredited partner.</p> <p>Test packages range from up to five tests per year to unlimited tests per year.</p> <p>Contact us for information about which package is most suitable for you.</p> <p><small>'test' is a test of one or more configured addresses or web URLs. E.g. Testing a /24 counts as one test, as would testing a /28</small></p>
Manual Penetration Testing	<p>This provides a more complete solution, and includes scoping, project management advice, testing, reporting and vulnerability assessment.</p> <p>Testing, done on-site or remotely via the Janet ESISS team, is in line with PTES, OWASP and OSSTMM recommendations, and includes common HE/FE/Research software from VLEs to databases.</p>
Consultancy services	<p>Contact us for further discussion about your requirements and to find out how Janet ESISS can support you.</p>

For further information about the Janet ESISS offering, please email the Janet Service Desk at service@ja.net



University of
St Andrews

This year, the University
of St Andrews celebrates
its 600th year

INTERVIEW:



Steve Watt
CIO at the University of St
Andrews and the Chair of HEIDS
(Higher Education Information
Directors Scotland)

University Challenge

“Mostly, our challenges are centred around the ever increasing expectations of what IT can deliver: demands from researchers, rising energy costs and security of data and information being just a few”

Steve, tell us a little bit about St Andrews...

St Andrews is a small town on the East Coast of Scotland and our university is distributed throughout the town – with 166 buildings. We have approximately 8000 students and 2200 staff. Within my central IT department I have around 90 staff, and there are also approximately 40 staff working within the Schools and Units. It's a fantastic place to work and the dynamic of the town changes throughout the year.

How long have you been CIO and how is the IT department structured there?

I've been here since January 2010. We currently have around 90 staff in four sections: Business Transformation, Information Assurance and Governance, Enterprise Applications and Infrastructure and Service Delivery. I head up Business Transformation and the other three are led by Associate CIOs. I am also responsible for change management at the university and I'm a member of the university's Senior Management Team.

When you joined St Andrews, what did you make of the IT function?

At that time there were seven email systems in use on campus and no data centres. There had been an external review of the IT function, which led to my appointment. The review found that, with changes in the way staff and students used IT, the way it was

delivered needed to change. Although technical services worked well, there was a perceived lack of customer focus, which is something the university really strives for. In reality however, the challenges were around relationship management, which we have focused on significantly.

What's the biggest challenge IT faces at the university?

There isn't one single thing that currently presents a big challenge; there are lots! Mostly, our challenges are centred around the ever-increasing expectations of what IT can deliver: demands from researchers, rising energy costs and security of data and information being just a few. And when it comes to organisational efficiency, this is sometimes a far greater challenge as it requires changes to business processes and not simply an IT fix. Services need to be invisible, and be there all the time. It's far more about the customer-facing services than what goes on 'behind the scenes'.

Everyone's demands are different. So how do you balance the needs of staff, students and researchers?

We know we have to engage extensively with each of the groups to find out what their needs are and to enable us to measure satisfaction and adapt our services accordingly. Each group is challenging but we balance the requirements of all of them. We're very proactive with a range of relationship

management activities: from focus groups to student meetings every six weeks. There is also representation from all these areas on the main ICT governance group.

IT needs to be seen as innovative and influential throughout the organisation, and the student experience is fundamental to what we do. We're competing in an international marketplace where students expect to be able to interact with all of our services online. They demand excellent services and, as they are our customers, we have to provide them.

Tell us about your WiFi services initiative.

When I joined the university there was limited WiFi provision on campus and student and staff demands for mobility and ubiquitous access were growing. We have now grown to in excess of 1250 access points and provide a WiFi service in all university buildings including student bedrooms.

There are many visitors to the university throughout the year, but particularly in the summer months. We've entered into a partnership with BT to make all WiFi services available to members of the public across the university buildings, and this has a 24x7 support provision. This will allow us to make internet services available to those who, for whatever reason, cannot legitimately access eduroam or the Janet network. We're currently working towards being able to expand coverage throughout the town centre of St Andrews.

You've taken on three IT apprentices and your passion for nurturing young professionals comes across strongly in your blog. Tell us more about this.

Last summer we employed three IT apprentices. The university has always supported apprenticeship schemes, from plumbers to electricians,

“We’re competing in an international marketplace where students expect to be able to interact with all of our services online”

and we’re 100 percent behind the Scottish Government’s commitment to guarantee education or training to all 16- to 19-year-olds. Expanding our apprenticeship programme into IT really appealed to me as a positive, but different way, to develop the IT professional of tomorrow. We’re extremely passionate about employee development and professionalism. We want to shift the profile of IT to a front-facing function; one that serves and underpins every aspect of what a university does.

How have other colleges and universities responded to your initiatives?

Since we set the precedent for taking on apprentices, a number of other universities have expressed a desire to do the same. This initiative has attracted a lot of interest and we’ve received requests for advice about how to make it happen. Our first three apprentices

went straight out into student-facing roles. They were all 18 and, as most 18-year-olds are totally immersed in technology, they really hit the ground running providing support for students from day one.

Across the board there’s been extremely positive feedback about this. So much so, we are about to take on more! I firmly believe this has added a richness and diversity to the workplace that didn’t exist before.

We understand St Andrews holds a number of accreditations and awards for its IT provision, not to mention your own award...

We achieved gold British Computer Society CEEDA (Certified Energy Efficient Datacentre Award) accreditation last year and were delighted to be the first public sector-type organisation in the UK to achieve this! The award

recognised the green design and performance of our data centre and how it is managed, which is helping to reduce our carbon footprint. The University of St Andrews has ambitious green targets, intending to be carbon neutral for energy supply by 2016. We won the IT Innovation in Optimisation Award at the Data Centre Dynamics Awards last December. In January 2013, we achieved Service Desk Institute certification following an intensive audit in 2012. The audit and certification process allowed us to look at all of our processes and has helped us improve the service to our users and how we operate behind the scenes.

At the Scottish Public Sector’s Holyrood Connect Awards in June 2013, we won the Green Award and I won the ICT Leader of the Year. I’m extremely proud of what we’ve achieved in a relatively short space of time. This is a very positive reflection of the skills, expertise and professionalism of all of the staff within my IT Services team.

As the Chair of HEIDS, you must have a good insight into the changes in Scottish Education?

The HEIDS group has representation from all Scottish Higher Education institutions and is a great platform for

Steve Watt receiving the ICT Leader of the Year 2013 award at the Scottish Public Sector’s Holyrood Connect Awards in June 2013

L to R: Fred Macaulay, Comedian. Nicole Cunningham, Conference Organiser, Holyrood. Steve Watt, CIO, University of St Andrews. David Wiszniewski, Territory Manager, Symantec





L-R are Sam Foster, Steve Watt, Peter Woodbridge and Steven Gonzales



FEATURE

sharing best practice and tackling the many issues which require a cross-institutional perspective. It's becoming increasingly important for IT leaders to work together like this if we are to deliver excellent services and be cognisant of the national perspective. We work very closely with a number of organisations such as Universities Scotland, SFC, APUC, SCONUL, SCURL, Scottish Government, Janet, Jisc, UCISA and Scotlands Colleges to ensure our own strategic thinking is aligned with the direction of such bodies and to ensure our voice is heard in shaping the future of the national IT perspective. At present shared services, SWAN (the Scottish Wide Area network) and research data management are some key areas of discussion. The group works extremely hard and is a very valuable body in supporting the wider change agenda.

Are you able to talk about some of the changes that are expected?

From an IT perspective there is a focus on sharing both resources and expertise and in general for more

collaboration where it makes sense to have it. A good example is in the sharing of data centres across all public sector and related bodies or shared expertise serving multiple organisations.

How do you think these changes will affect your IT provisions at St Andrews?

The biggest changes are likely to be the more widespread adoption of cloud solutions and a much greater use of shared services. Having resilient and fast Janet connections provides a sound platform for sharing services across institutions. Here at St Andrews we already outsource both staff and student email, share a service desk solution with a number of other universities and use a number of off-campus based solutions. In Scotland generally there are a number of really good examples of shared services working well, such as the shared data centre in Aberdeen. The economies of scale such sharing creates makes 24x7 support a reality especially as we all continue to serve a greater around-the-clock demand for services.

What competitive edge will the next generation of IT offer higher education in Scotland?

The new generation of student has grown in a very different way, immersed in technology from their early years and with vastly different expectations. In my opinion many of the new trends and technologies will provide universities with different ways of delivering core services and supplementing lectures and tutorials. At the moment I think we have really only made small steps in providing a truly joined-up student experience.

Also, we are already seeing a radical shift in other sectors to more use of Software As A Service (SAAS) solutions for mainstream business application, such as Sales, HR, Finance and productivity applications. I think as a sector we need to seriously consider all such options and work with key suppliers to get them to consider delivering or offering us more sector-specific SAAS solutions.

Alternatively, as stated earlier I think the opportunity in Scotland (and beyond) for higher education institutions to share such applications has a greater imperative than ever before – not perhaps to directly provide competitive advantage but to allow resources to be used in a different way to directly pursue our core missions of teaching, learning and research.

“I'm extremely proud of what we've achieved in a relatively short space of time. This is a very positive reflection of the skills, expertise and professionalism of all of the staff within my IT Services team”

BYOD Safely



Andrew Cormack
Chief Regulatory Advisor, Janet
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Bring Your Own Device (BYOD) is sometimes viewed as a new challenge, but it's better seen as an opportunity to develop benefits that the education sector has been enjoying for years. Staff and students have worked on their own computers at home and out of hours for nearly two decades; webmail, online journals and other off-site services soon followed and mobile devices are commonplace. Each change made life more convenient and work more efficient; new risks may have emerged but so have new opportunities to deal with them.

The Information Commissioner's Guidance on BYOD¹ confirms that, as with any other use of computers, organisations must ensure that information, equipment and users are protected. Personal devices or home computers used for work may be shared with family members and others and policies and practice must protect those individuals' personal data too.

Protecting information involves a combination of physical, technical and behavioural measures. As working outside the office became more common, the focus moved from physical walls and locked doors to technical protection on computers and appropriate behaviour by users. BYOD makes behaviour even more important as trying to use technology alone to prevent unsafe behaviour becomes less effective. Technical measures may even be harmful if they create intrusive records of users' (and others') personal activities. Effective policies explaining the safe way to use devices and information are essential.

Here the fact that the owner is using their own device should help because they will be protecting their personal information, not just the organisation's. Measures such as locking the device with a password, avoiding risky applications that may steal information, keeping work and personal information separate, and (if possible) remotely wiping the device if it is lost, protect both the owner and the organisation. Safe behaviour becomes a matter of self-interest, not just policy compliance.

“Protecting information involves a combination of physical, technical and behavioural measures”

For some information, relying on the user to do the right thing may not be enough. Equally, some technical measures or policies that an organisation might implement on its own equipment may be unacceptably intrusive on a personal device. Managing BYOD involves assessing what security measures the organisation's information and services require, and working with device owners to agree what security measures are reasonable for them. If a service or information requires stronger protection than BYOD can provide, both parties should recognise that the right place for that information is an organisation-managed device, not a personal one.

When organisations consider offering services such as email, filestore and other applications through an external web interface they are already assessing which are safe to access off-site. A BYOD policy requires services and information to be put into one of three categories: on-site only, off-site managed device, and off-site BYOD. You may choose to subdivide the BYOD category depending on whether the device offers

¹ http://www.ico.org.uk/for_organisations/data_protection/topic_guides/online/byod



technical security measures such as encrypted storage, remote wiping, or encrypted communications (typically SSU). For each of your services or information, identify which category provides the minimum acceptable security; you might decide that calendars can be accessed remotely on BYOD so long as the device can be wiped when lost, whereas sensitive financial information must be kept in the office and only accessed from organisation controlled devices.

At the same time, discuss with BYOD owners what security measures they can take, and how these interact with their personal use of the equipment. This may well require support and guidance: don't assume that owners know or use the security features their devices provide. The result should be agreed policies on what information can be accessed and how it will be protected. Good places to start include:

- keeping personal and organisational information separate (a policy that the organisation will not touch the personal area can encourage this)
- backing up the information on the device (both personal and organisational)
- learning how and when to use facilities to locate and remotely wipe it (both are very useful after a device has been lost but either could be a security and privacy problem if used inappropriately while the owner still has it)

Developing a BYOD policy is mostly about discussion and agreement: what safe use of the device involves, how to do it, and how to support it. A good policy should improve safety in both our work and private lives.

To read more from Janet's regulatory blog on BYOD, visit <https://community.ja.net/blogs/regulatory-developments/tags/BYOD>



In Issue 20 of Janet News we explained how the Jisc transition presented an opportunity to review all of the Access and Identity Management (AIM) activities undertaken by Jisc to support the research and education community.

Taking AIM

Seven months on, we are well on the way to addressing the issues that were identified:

- establishing a joined-up approach to development and service delivery
- creating a single function with responsibility for the leadership, management and coordination of all aspects of AIM
- enhancing our customer focus
- ensuring we deliver value for money

UK Access Management Federation

As part of the Jisc transition, in August 2013 Janet once again became the operator of the UK Access Management Federation. As a first step to providing a single point of contact for AIM services and development, we have moved to a single helpdesk number for all AIM services by bringing the telephone support for the UK federation into the Janet Service Desk on 0300 300 2212, making it easier for you to engage with our activities and services.

The UK federation Policy Board has evolved into a wider AIM Advisory Group and, as well as widening the scope to include all of Jisc's AIM services and development activities, membership has also increased to better represent all UK federation stakeholders.

Find out more about the UK Access Management Federation by visiting: <http://www.ukfederation.org.uk>

AIM Strategy

In July 2013, we published a new draft AIM Strategy outlining the high-level objectives needed to continue the evolution of access and identity management for the UK research and education sector. Our mission is to be world leaders in simplifying, managing and securing online access to resources and networks for our customers and their users. Details of how we will deliver this strategy can be found in the associated 'Evolution and Delivery of Services Plan', which describes the existing services and development activities with clearly-stated targets of how the strategy will be met over the coming two years. Both the AIM strategy and plan will have an annual review to ensure we continue to meet your requirements. This consultation is due to close on 1 October, but we are happy to receive feedback at any time.

The Strategy and Plan can be found at <https://community.ja.net/groups/access-and-identity-management-aim>

To engage with us in this review and on an ongoing basis you can join the AIM community group and provide feedback there or you can talk with your customer engagement representative: <https://www.ja.net/support-advice/customer-engagement-team>

Creation of the Shibboleth Consortium

A key part of the AIM Review was the need to ensure that we have effective product lifecycle management in place, including achieving sustainability of critical software and tools. The core software used in the UK federation for enabling single sign-on and authorisation to access web services across different organisations is Shibboleth-SAML-based open-source software. Developed by Internet2, it was first released in 2003, and has since been widely adopted by research and education communities around the world. The UK has played a significant role in supporting the development and implementation of Shibboleth, and in March 2013, Janet assumed this responsibility from Jisc Advance.

“Our mission is to be world leaders in simplifying, managing and securing online access to resources and networks for our customers and their users.”

In order to strengthen commitment towards the ongoing development and support of the Shibboleth software, Janet, Internet2 (United States) and SWITCH (Switzerland) formally established the Shibboleth Consortium during the April 2013 Internet2 Annual Meeting. With Janet appointed as the Consortium Operator, the Shibboleth Consortium will be focusing on:

- the development of Shibboleth version 3
- improving documentation and training resources
- promoting adoption of Shibboleth amongst NRENs, research and education institutions, and commercial organisations

More information is available on the Shibboleth website: <http://www.shibboleth.net/>

Moonshot is now in pilot service phase

Within our research and development activity we are making good progress with Moonshot – Janet's world-leading strategic development that provides single sign-on to non-web applications and services. The pilot is enabling us to meet the needs of our core research and education community and will allow us to develop distinct and unique services to our customers.

Moonshot has been identified as a key enabler to help industry partners engage with our community, so we will be providing targeted outreach to ensure we meet specific needs. We are also developing a managed service offering to facilitate industry engagement and deployment of Moonshot technology.

You can follow the progress of the Moonshot service pilot at <https://community.ja.net/groups/moonshot>



IT Service Continuity – How up to date are your plans?

“We at Leeds use Janet Primary DNS service as a backup primary DNS server. It worked very well on the three occasions we used it to redirect our institutional website to an offsite backup server. We like the simple interface and easy operation.”

Qin Li, Information System Service, University of Leeds

A sound IT Service Continuity plan can mean the difference between business as usual and loss of reputation, lower student experience, teaching and research disruption and, ultimately, reduced income. Many issues that can be devastating for a college or university may be uncontrollable. It doesn't matter whether the situation is a system failure, a cut circuit or a fire; it's how you deal with the aftermath that's critical. To have a chance of restoring business and processes, a robust, current, and – most of all – operational IT Service Continuity plan is absolutely core.

Making the case

Investment in IT Service Continuity is important, but, it is all too often seen as optional; organisations can be reluctant to invest in something 'just in case'. Financially, however, the risk of not doing so can be far greater.

“It's important to be proactive and think about the impact of maintenance and updates as well, not just worst-case 'disasters'”

What if...

Imagine the repercussions of a simple website failure, and now imagine that failure happening during 'clearing' in August. The difference between a simple IT 'incident' and what the organisation may define as a 'disaster' would become very blurred.

If potential students can't view your site, they are more likely to go elsewhere. Loss of students also equates to loss of income. However, the capability to keep the lines of communication open, and have a continued web presence, together with alternative communication channels, could completely change the situation.

Similarly, consider the importance of core systems during assignment submission or electronic exams. Resilience is key. If a road is being dug up you can lose a circuit and no resilience equals no site. The IT estate is a collection of inter-connected systems; it need not be a massive server failure to have an impact; if the DNS isn't working, services may become inaccessible.

Keeping your plan up to date

There's no hard and fast rule as to how often you should review IT

Continues on p27

WHEN DISASTER STRIKES:

In February 2012 the University of Strathclyde had a fire in one of their largest buildings. The building housed three academic departments (about half of the Engineering faculty), research labs, student computer labs (over 300 student PCs) and a large amount of teaching accommodation - 50 teaching rooms, ranging from small seminar rooms to 250-seat lecture theatres.

We spoke to Bruce Rodger, Head of Infrastructure Services at the University of Strathclyde, to find out what the immediate effect of the fire was and how their business continuity and disaster recovery plans worked.



How did you communicate with your students and staff?

The speed and value of social media was really highlighted on the night of the fire. I was alerted when a colleague phoned me – he had seen a tweet from someone in the student union. Later that night, we sent emails to all staff, put messages on facebook, twitter, and the web, advising of arrangements for the following day. We also sent SMS messages to over 16,000 contacts using the Janet txt service. Thankfully we had recently had a publicity drive to collect mobile numbers for most of our students.

How did your business continuity and disaster recovery plans deal with the disaster?

Things swung into action very quickly. Classes in that building were only cancelled for one day; we had rescheduled virtually all mainstream teaching to other spaces within a few days. One problem with many disaster recovery plans is that



they don't necessarily address the more specific problems of specialist accommodation. It was reasonably straightforward to provision additional office accommodation for staff and researchers, but finding suitable specialist teaching and research accommodation was more challenging.

From a networking perspective what was the impact on the rest of the campus?

The impact on the rest of the campus was minimal – this was partly as a result of high previous investment in diverse fibre routes and ducts. By 9am on the morning after the fire, service to all other areas of the campus was restored, other than to one area that had no power.

How did you manage the expectations of staff and students?

We had to manage a variety of expectations, including staff who asked if they'd be back in the building the following week! Within the building, the fire had been contained in a small area, but the smoke and water damage was extensive. Ankle-deep water on the floors below, and smoke damage above. It's hard to describe just how damaging 'smoke damage' is – it's sticky and can be corrosive. It was like the building had been painted with tar. Much of the data cabling in the building was condemned, mainly due to water ingress at the ends.

How did the fire affect users?

No matter how much you tell users to store data centrally, inevitably some will store some data on local machines, and not attach sufficient importance to backups (until disaster strikes). The IT salvage people did a great job of

recovering and restoring data from damaged equipment, and the incident provided a catalyst to reinforce our data management processes around the edge of the network.

How are things now, 18 months on?

The damage caused by the fire was extensive, with some serious structural issues. It has, however, provided the opportunity to accelerate the scheduled refurbishment programme in that area. A small number of specialist research labs were re-opened soon after the fire, but much of the building is still a building site. About half of the occupants will be back in by the start of the next teaching session, and the building should be fully refurbished by January 2014.

What lessons did you learn from the fire?

The time-consuming bit wasn't the services in the affected building, or the short-term restoration of neighbouring services, it was provisioning temporary (and not-so-temporary!) services in decent spaces. We quickly had to find accommodation for over 200 academic staff, and a similar number of research students.

Most sites will have a business continuity and disaster recovery plan that considers a short-term response to the loss of a building, but how many of us have realistic plans for the loss of a number of large lecture theatres? We ended up doing some of our teaching in a cinema (which worked surprisingly well).

The importance of asset registers and a well-managed inventory should not be underestimated. It makes working with the insurance people so much easier.

Service Continuity plans, but as your organisation changes so should your plan. It is vital that the needs of the organisation are met to ensure that a plan will translate to business continuity rather than a false sense of security.

It is also key to consider the full range of systems and to test, in order to prevent any key systems being overlooked. For example, having a secondary DNS nameserver off-site is good practice, but are you sure the zone is being transferred?

Other questions might include: When did you last review your plan and test your back-ups or your failover plans? Don't rely on it just because you have bought it – test. Do your systems fail over gracefully; does your data back-up function appropriately in different scenarios?

Covering different eventualities

Whether you're a college or university it's important to be proactive and think about the impact of maintenance

“When did you last review your plan and test your back-ups or your failover plans? Don't rely on it just because you have bought it – test”

and updates as well, not just worst-case 'disasters'. Although different organisations have different expectations, they all rely on network connectivity.

Sometimes, when thinking about the length of time for a service disruption it's important to remember it may not be a matter of just identifying the problem and immediately implementing a solution.

Over the years we've seen a wide variety of network outages ranging from an 'under the sea' cable break to an inappropriately positioned blowtorch damaging fibre circuits across a major railway bridge. Further complications from atrocious sea states and the dangers of passing

trains can all add up to a longer outage than first envisaged.

Going forward...

We would advise considering what your priorities are as an organisation. What systems and means of voice and data communications do you require in order to carry out critical activities? This will require input from around the organisation because what the finance department think is crucial may differ from the views of student administration, or more importantly from your students or researchers.

How can Janet help?

We offer a wide variety of services that can help and support your service continuity requirements.

- Network connectivity
- DNS services
- Web Hosting
- 3G mobile data services
- SMS services

We also provide advisory services for areas such as wireless technologies that could inform or assist with advice on a temporary WiFi solution.

Speak to your Customer Engagement Manager for more information on our services or email service@jo.net



Protecting Reputation and Free Speech



Andrew Cormack
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Defamation online has been in the news, with a recent high-profile case finding that even a short tweet can be defamatory and result in tens of thousands of pounds in damages. Blog posts, comments and any other Internet publication are likely to be covered by the same law. In the past the law has required universities and colleges to make a sometimes tricky distinction between robust academic debate and defamatory comments: a new Act should make this simpler.

Defamation occurs when you publish a statement that 'substantially affect(s) in an adverse manner the attitude of other people towards the claimant, or ha(s) a tendency so to do'.¹ If the statement is true, then it cannot be defamatory. You can defame someone by implied meaning or by repeating a defamatory statement made by someone else.

European law ensures that websites and other publishers can't be sued for defamation that others commit using their systems, so long as they are not aware of it. Once informed, however, they may become liable if they do not act promptly to remove or amend the statement. In practice most websites simply remove statements when a complaint is received: an approach called notice and takedown.

For universities and colleges, however, the position is more complicated. As well as requiring them to protect individuals' reputations, the law requires them to protect free speech, within the law, by their members and guests.² Since normal

academic debate can sometimes involve robust statements that an opponent is wrong, it can be difficult to decide which legal duty takes priority. Normally the courts should settle conflicts between legal duties but until recently universities and colleges had to choose themselves whether personal reputation or free speech appeared more important in each case and to bear the legal consequences if a court later disagreed with their decision.

The new Defamation Act 2013 creates two new ways to avoid this dilemma, at least for those in England and Wales. First, if the website gives enough information about a statement's author for the victim of the alleged defamation to sue them, then the operator of the site cannot be sued unless a court decides otherwise. If the author is an employee then their employer may still be sued under vicarious liability, however.

For unattributed comments, the website operator can still be protected so long as they follow a prescribed process when complaints are received. Details are still to be agreed by

“You can defame someone by implied meaning or by repeating a defamatory statement made by someone else”

Parliament but a draft, shared with Janet and UCISA by the Ministry of Justice, proposed that the operator would forward the complaint to the author and obtain their contact details (we pointed out that for members and guests, universities and colleges would often have these already) and could then wait until a court either ordered the statement to be removed, ordered disclosure of the contact details, or concluded that the statement did not cause enough harm to justify breaching the author’s privacy. Provided the author cooperated by supplying contact details this would allow a court, rather than the website operator, to resolve the conflicting legal duties.

In addition to the two existing options when you receive a complaint – remove the statement or leave it – the Act creates two more: require all postings to be attributed, or implement the process for tracking complaints and responses. Unlike notice and takedown, these new options avoid legal risk until a court hearing. Although it won’t be possible to make detailed plans until the notification process is agreed by Parliament, universities and colleges should review which of their websites, blogs, etc. allow non-employees to publish statements, and consider which of the ways of dealing with complaints is best suited to each.

The Act isn’t a complete solution for website operators, as it doesn’t cover other types of unlawful publication, notably copyright infringement. Defamation law is matter devolved to the Scottish and Northern Irish legislatures and they have not yet announced if they will follow the Westminster approach. However the European Commission is also looking at “notice and action” procedures, so they may come up with a more general law.

¹ *McAlpine v Bercow* <http://www.bailii.org/ew/cases/EWHC/QB/2013/1342.html>

² Education (No.2) Act 1986, s.43

To read more on the Defamation Act, visit <https://community.ja.net/blogs/regulatory-developments/tags/Defamation-Bill>

Working across borders to protect you



Collaboration between CSIRT teams is crucial to a fast and effective incident response. As the Computer Security Incident Response Team (CSIRT) for the UK's National Research and Education Network (NREN), we are responsible for receiving, triaging and responding to incidents in the most effective way. This can include prevention, incident detection and awareness raising.

Following best practice internationally

Following and promoting best practice about how we have dealt with threats or patterns and learning from other CSIRT teams is a valuable part of what we do. It allows us to identify and respond faster if we encounter a similar case or situation. We are part of TF-CSIRT which promotes collaboration and coordination between CSIRTs in Europe and liaises with relevant organisations such as ENISA (European Network and Information Security Agency), regional CSIRT organisations, and also defence and law enforcement agencies. Membership not only allows us to improve coordination and cooperation but also to attend training to improve our skills.

A recent distributed denial of service attack

In the experience of the CSIRT team, we recently witnessed a denial of service attack which showed that a link had become saturated. Within a few seconds, the connection went from a stable 200Mbps to 1 Gbps which flooded the link fully.

A quick analysis of traffic showed that a webserver was being attacked. Netflow captured the attack and showed that the webserver was receiving an excessive amount of DNS (Domain Name System) traffic.

This attack (DNS reflection attack) was constructed by using open DNS resolvers on the Internet. By querying them with a spoof source IP address (of the system they wished to attack) the source of the attack was able to amplify the effectiveness of the attack. A small query

generates a large response and it was this large reflected response that was used to render the webserver useless.

We were able to identify in excess of 5000 open DNS resolvers used in this attack and shared the information with our trusted international partners. One service provider was accountable for a third of the open DNS resolvers that we saw were responsible for the attack and they worked with us to successfully mitigate the issue for our customer involved.

Learning and sharing

We worked with other NRENs to get other open resolvers shut down that were operating in their geographical area and shared information through a closed distribution list.



Trusted Introducer

The Janet CSIRT is endorsed by Trusted Introducer (TI is part of TF-CSIRT). CERTs (Computer Emergency Response Teams) aspiring to be TI accredited/listed are required to go through a formal process of acceptance whereby any objections raised by other TI teams lead to the suspension of the process, which also includes gaining support from two member organisations. This creates a trusted environment where very sensitive information is shared. TI accreditation and certification needs constant effort to maintain its status. It also provides an independently measured team maturity level to the constituents and funding bodies.

As the TF-CSIRT/TI initiatives are EU-oriented, FIRST (Forum of Incident Response and Security Teams) has more global scope. FIRST brings together a variety of incident response teams from different backgrounds such as government, commercial and educational organisations. As a member of FIRST, we can make use of tools, publications and training, participate in special interest groups and contact and cooperate with teams from around the world.

Protecting the community

All of our work is aimed at protecting you, our community. We can pursue investigations concerning any incident affecting our community even when investigations lead abroad (as often happens since the Internet is borderless). Our involvement in TF-CSIRT and TI mean that we receive help from other CERTs around the world. All of this happens in a trusted environment where information is shared, but where we can also be sure that the information will be handled in a private manner. This ensures that not only are we able to work with you to pre-empt likely incidents, or to resolve issues when they arrive, we are also concerned with ensuring your reputation remains intact.

For further information about Janet CSIRT or to contact the team, visit <https://www.ja.net/csirt>

Over the next few of issues of Janet News, staff from Janet's Strategic Technologies division will highlight some key technology trends that you should be watching. These technologies could save you money, improve the student experience or position your organisation to compete nationally or internationally. In this issue, Mark O'Leary looks at the top trends in mobility.

Three trends in Pervasive Connectivity



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High bandwidth connectivity from a fixed location on campus is now a given; users expect their activities not to be constrained by network availability or speed at the desktop. When considered at all, fixed connectivity is treated like water or electricity, an infinite resource available on demand. However, until recently wireless connectivity solutions could be very different. Users were forced

to be aware of how they were connecting, how fast, and how (un)reliable the connection was.

That is changing. The most recent WiFi and 4G standards (such as 802.11ac) offer a reliable step-change in bandwidth and open the door to a range of demanding real-time interactions (e.g. VLEs, VC, streaming). The mobile experience is getting closer to desktop connectivity and users can both re-focus on the task rather than the connectivity, and start to grasp the opportunities that true

mobility can offer. This is a turning point not just for the kind of pervasive connectivity solutions offered, but also for the ways in which they are used (BYOD support is a notable use case) and how deeply they are integrated into the business processes of the organisation.

Here are the trends to watch:

eduroam

www.eduroam.org;

<https://www.ja.net/products-services/janet-connect/eduroam>

Federated WiFi has been hugely successful across Europe, and connectivity when roaming within education is now largely a 'solved problem'. Strong security and robust interoperability ensure that the vast majority of devices and users can obtain a data feed when required. However, the few cases where this does not hold true are a real source of frustration for the affected user, so investing in improving local eduroam user support is important.

The positives of joining eduroam are increasingly compelling: a roaming federation of global reach has





inherent value, and every site that joins increases that benefit for all. With increased competition for students and participation in collaborative endeavours, organisations that have not yet joined should strongly consider doing so.

Meanwhile, eduroam itself is at a crossroads. Does it continue as a 'closed shop' focused on the needs of research and education, or does it expand its scope to a wider public sector or even the commercial user community? This debate is live now in eduroam governance circles, and Janet is a proponent of the 'expansionist' view.

2 4G data telephony

<https://www.ja.net/products-services/janet-collaborate/janet-telephony-purchasing-service>

Following the spectrum auctions, the winners are investing in 4G infrastructure. Some licences carry coverage guarantees, so 4G is imminent in most population centres. Results from Janet's 4G trial are showing that 4G can have a transforming effect on users' lives and productivity. Although videoconferencing is reducing the need for physical travel (and helping institutions to realise financial and environmental savings) there is still a baseline of travel required, and pervasive connectivity increases the value of that travel time.

“fixed connectivity is treated like water or electricity, an infinite resource available on demand”

Current industry practice is to bundle voice and data together, but it might be worth looking at uncoupling a proportion of your data package to give more flexibility on the data procurement side for dongles and non-telephone devices. The Janet telephony purchasing service is worth investigating as a way to obtain this kind of flexibility, and it should be noted that Janet is considering the next steps from the Janet 3G service towards a potential 4G offering.

3 Single sign-on

<https://www.ja.net/products-services/janet-futures/moonshot>

It may be a surprise to see access and identity management concerns pitched as a trend in mobility, but the cluster of middleware solutions that manage access to networks and resources are vital to realising the full value of pervasive connectivity. The UK federation is the key technology for web-based resources at present, but the upcoming general solution Project Moonshot (currently in pilot phase) is showing considerable promise as a unifying framework that could meet the needs of AAI for network connectivity (eduroam), web resources (UK federation) and non-web resources such as high power computing. With this kind of trust infrastructure in place, an organisation can begin to realise the benefits of creating dynamic multi-organisation communities of interest that can easily deploy task-specific AAI solutions across the full range of their assets.

Trends in mobility don't exist in a vacuum. For example, 4G planning will overlap with Unified Communications considerations (to be covered by a future article in this series). However, an organisation that has a clear roadmap to bring the latest WiFi capabilities on campus, and whose staff and students are equipped with a near-pervasive roaming solution through the combination of 4G and eduroam, is well placed to meet the challenges and reap the benefits of a mobile workforce and increasingly collaborative environment.



A guide to LOW LATency Audio Visual Streaming

Since 2005, GARR (the Italian NREN) and the Conservatorio di Musica G. Tartini, in Trieste, have undertaken the ultimate challenge – to enable musicians to play simultaneous, real-time musical performances across vast distances.

LOW LATency Audio Visual Streaming System, or LOLA, makes natural human interaction between distant locations achievable via a high speed, high performance network, such as Janet. Originally conceived for musical performance and education, LOLA has the potential for any real-time scenario including dance, theatre, etc. The technology could even be used to demonstrate medical applications using real-time control.

Technical equipment needed

To comfortably play together, latency of approximately 40 - 75ms round trip (depending on musical style) is needed. LOLA relies on a specific set of hardware to create low latency, using software utilisation and high performance audio/video devices. The current set of hardware that is recommended is as follows:

Minimum PC requirements:

- Intel dual/quad core based system (i5 or i7)
- At least 4 GB RAM
- 500 GB Hard Disk

- Motherboard with PCIe bus and DDR2/DDR3 ram technology
- 1 or 2 Gbit LAN ports
- Low noise case/power supply with PCI/PCIe card slots for the following:
 - A decent graphics card e.g. from the Nvidia Geforce/Quadro range
 - Bitflow ALT-PCE-ANI Analogue Frame Grabber with SDK 5.60 drivers
 - RME Hammerfall HDSP 9632 PCI Audio Interface or RME Multiface II (PCI/PCIe host card + external ADC/DAC box)

You will also need one of the following SD cameras, with an appropriate C/CS mount lens:

- Hitachi KP-FD30 (colour)
- Toshiba IK-TF5 (colour)
- Sony HR50 (Black and white)

A custom analogue (VGA to 62 pin) cable to connect the camera to the PC is needed. Each of the recommended cameras above requires a different cable pin out. You can find a detailed schematic for these cables in the LOLA documentation via <http://www.conservatorio.trieste.it/artistica/lola-project/documents>

These can be built in-house, or bought from custom cable companies.



There are a few extra peripherals which are needed to complete the basic LOLA set of hardware: good quality microphones, a decent analogue or digital mixer (with at least two buses) and a fast LCD/LED monitor with a low response time (approximately 2-5ms). Other hardware, including high definition cameras, are currently being tested.

Network connectivity

LOLA requires from 95Mbps (SD, black and white, 30 fps video) up to approximately 490Mbps (SD, colour, 60 fps video). It is therefore recommended that each remote site has at least a 1 Gb connection, which can be dedicated to using LOLA. To avoid network delay, the PC should be connected as close to the LAN edge routers as possible, and should not be behind a firewall.

LOLA in action

Delegates at Networkshop41 saw a LOLA demonstration between Keele University and Edinburgh Napier University. Over a distance of approximately 390km, there was a 9ms (RTT) latency using two channels of audio and colour, 60 fps video. Delegates were very impressed with the technology and the quality of the classical and jazz performances.

“The LOLA system worked flawlessly and it was a great experience to be able to perform with a group that was over 1 000 kilometres away. LOLA is a wonderful innovative system and will make many things possible in performance and education”

Steve Waterman, Professor of Jazz Trumpet, Trinity College of Music, London and visiting Jazz Trumpet specialist at The Royal Northern College of Music and The Welsh College of Music and Drama

Another demonstration took place at the TNC Conference between a soloist (trumpet) at Edinburgh Napier University and a quartet (drums, bass guitar, saxophone, guitar) at the conference centre in Maastricht, The Netherlands. There was an approximate round trip latency of 22ms over a distance of just over 1,000km. Like Networkshop41, 60 fps colour video was used, and this time, eight channels of audio were sent both ways.

Institutions around the world have been using LOLA for teaching and

rehearsals. Within the UK, the Royal College of Music and Edinburgh Napier University recently collaborated in a project that involved rehearsals, coaching sessions and finally a live performance by a clarinet quartet.

For more information on LOLA, please contact Emma Smith at Emma.Smith@ja.net or visit our community site: <https://community.ja.net/groups/arts-and-humanities>

Events Calendar

2013							October						
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6							
7	8	9	10	11	12	13							
14	15	16	17	18	19	20							
21	22	23	24	25	26	27							
28	29	30	31										

2014							April						
Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
	1	2	3	4	5	6							
7	8	9	10	11	12	13							
14	15	16	17	18	19	20							
21	22	23	24	25	26	27							
28	29	30											

Moonshot UK Pilot Meeting

16 October 2013

Arden House Conference Centre, The University of Warwick

A face-to-face meeting with the Moonshot pilot participants.

For more information: <https://www.ja.net/events/moonshot-uk-pilot-meeting>

Janet North East Regional Briefing

17 October 2013

Regional Support Centre Northern, University of Sunderland

A briefing to Janet customers on the transition of NorMAN and the provision of key Janet services.

For more information: <https://www.ja.net/events/janet-north-east-regional-briefing>

Janet NI Briefing Day

18 October 2013

Stranmillis University College

This event is aimed at ascertaining customers' requirements for networking beyond 2014. It is also an opportunity to brief customers on Customer Engagement for the region, Janet security policy, cloud services, Janet6 and Futures.

For more information: <https://www.ja.net/events/janet-ni-briefing-day>

Janet CSIRT Annual Security Conference

30 October 2013

One Wimpole Street, London

This event is to promote the sharing of technical information and anecdotal experiences to illustrate effects of and approaches to security incident response and security issues in general.

For more information: <https://www.ja.net/events/janet-csirt-annual-security-conference>

Workshop42

1 – 3 April 2014

University of Leeds

The UK's premier research and education networking event, Workshop42 offers a unique opportunity to present and discuss the technical and practical aspects of providing advanced network services and applications to the research and education community in the UK. Experts from within the Janet community and further afield will be presenting on the issues that affect you along with practical seminars and discussion groups. There will be a large exhibition area showcasing companies who supply equipment and services to the Janet community.

For more information: <https://networkshop.ja.net>

Janet Training

Janet runs a portfolio of one-day courses specifically written for the Janet community and delivered by experts working in UK research and 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 run at your organisation with our in-house service.

A complete list of training courses can be found on our website at <https://www.ja.net/training> but here are some upcoming courses that you can register for now:

October 2013

Hands on Digital Forensics

8 October 2013
Bristol

Computers, Privacy and the Law

9 October 2013
Bristol

Implementing a Shibboleth 2 Identity Provider

22 October 2013
Manchester

Implementing a Shibboleth 2 Service Provider

23 October 2013
Manchester

November 2013

Basic Networking

12 November 2013
Birmingham

Basic Router Configuration

13 November 2013
Birmingham

eduroam Fundamentals

19 November 2013
Nottingham

Implementing eduroam at your Organisation

20 November 2013
Nottingham

December 2013

Managing IT Security

10 December 2013
Birmingham

DEVELOPING YOUR TEAM?

Janet Training offers an in-house service to suit your needs. We will deliver the course in your own familiar surroundings providing you with an expert trainer for the day, workbooks and all the necessary equipment.

Running an in-house course means you can focus on the issues relevant to your team as well as being a cost-effective training solution.

Contact us today to discuss your requirements.

W: <https://www.ja.net/training>

T: 01235 288242

Follow us on Twitter @janettraining

EVENTS TEAM PROFILES



Teri Smith

I started working at Janet in January 2012 on a fixed-term six-month contract to help with the marketing activities for Networkshop40. This proved to be a really challenging but exciting project – talk about hitting the ground running!

No sooner had this event finished than the Super Hi-Vision project started with the BBC. This was another fabulous idea where I worked with colleagues both in Janet, the BBC and Bradford Film Museum to organise simultaneous events at three locations: London, Bradford and Glasgow. Soon afterwards, I became a permanent member of the Janet Marketing and Events team.

The number of events and exhibitions that we arrange and attend is ever increasing,

so my role is now split equally between marketing and events. This year I was heavily involved in Networkshop41 and right now Wendy and I are busy preparing for Networkshop42, in addition to attending various sector events such as UCISA, AoC, AoC Cloud and all the RSC events.

Outside of work, I enjoy knitting and reading and am currently doing a CISCO networking course.



Wendy Salmon

I joined UKERNA, as it was known, in 1986. Prior to joining UKERNA, I had taught Home Economics for twelve years and then worked in the Music Department of the Bodleian Library in Oxford for three years, and organised recitals in my free time. My previous roles gave me a useful set of skills for building up the events activities at Janet and working within the Janet community.

Our events programme has developed and changed over the years as new technologies have been introduced, with our annual Networkshop conference remaining a highlight of the Janet calendar. One of my key responsibilities is to identify 'willing' universities to host Networkshop in subsequent years. Janet events aim to inform and be informed and also to be

enjoyable – and have been arranged on boats, trains and even under planes!

When not at work I enjoy researching my family history; gardening; cooking and attending events at my local Arts Centre. I met my husband at Janet and have been happily married to Dr David Salmon for 14 years.

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For the latest news from your CE
Manager, search for your
Regional Community Group at
<https://community.ja.net>



NETWORKSHOP 42

AT LEEDS UNIVERSITY
1-3 APRIL 2014

SAVE THE DATE



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janet

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JANET COMPETITION



France recently hosted the 110th Tour de France. For a chance to win your own Janet water bottle, please tell us who won the 2013 Tour de France. Send your answer to marketing@ja.net with the subject line 'JN22 competition' by Friday 25 October 2013 (and please include your postal address!)

Please note: the correct answer will be chosen at random; we will only contact the winner; the answer will be posted on the Janet News Community Group on Monday 28 October 2013; Janet staff and members of the Jisc group may not apply.

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