JANET NEWS

KEEPING YOU UP-TO-DATE WITH JISC TECHNOLOGIES

30 years of the Janet network • 30 years of the Janet network • 30 years of the Janet network

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Celebrating 30 years

Jisc

CEO Welcome

Dear Colleagues,

As we head towards Easter, it reminds me that the end of the academic year will be upon us very quickly, and what a fantastic year it has been. We have witnessed successes all across the community and are always immensely proud to be working with you, supporting you, and enabling your ambitions to become a reality.

When I think back to what we have achieved in the past year, the highlight has certainly been the successful launch and implementation of Janet6 which sits at the heart of the Jisc offering. Your ongoing feedback ensures we keep delivering to the highest standards and really makes all the tremendous effort and commitment worthwhile.

Through the introduction of the Jisc Group's innovation strategy, we have some interesting and exciting times ahead. The group-wide adoption of the co-design process is focused on embedding the customer into the heart of our service development with the aim of providing the right solutions to meet your needs.

A prime example of this is access and identity management (AIM). The Group's activities are progressing well in this area where we are developing approaches to enable you to optimise security levels in your organisation.

As with all other services, we are determined to help you save money and resources, and improve the student experience in the process.

There are always challenges to overcome, but we see these as merely opportunities to push our boundaries even further, to make your lives easier.

Networkshop42 at the University of Leeds is upon us, and it is wonderful to see so many of you joining us, particularly this year as we celebrate the 30th birthday of the Janet network. It will also be a time to explore our expanded remit beyond the network to establish a broader Jisc technology portfolio.

As I mentioned at Networkshop41, the contribution that you, our community, makes to Janet, generates unique value. We really do appreciate your time and support, not only at this event, but also in helping us develop to meet your needs over the past three decades; we look forward to even closer collaboration in the years to come.

Thank you.

Tim Marshall
Executive Director, Jisc Technologies & CEO, Janet

Editorial

A warm welcome to this special edition of Janet News, celebrating 30 years as the UK's leading research and education network. Our anniversary insert looks back at how the landscape has changed since SuperJANET and includes interviews with former and long-serving colleagues. Tim Marshall also gives us a glimpse into the future of Janet, as it becomes a core part of the Jisc Group offering.

We continue to review our services and charges to provide the best value for money for the community and we discuss a recent review of the Janet network charge (pg3). Procurement is underway on an ambitious project for a shared data centre facility,

within four hours' travel from London, for six research-oriented organisations (pg9).

The launch of Janet6 last year was certainly a huge success for all involved. In this issue we learn about the benefits that Janet6 is already providing to the community and how we are continuing to develop the network to meet your growing needs (pg22-25).

We are also pleased to welcome Noel McDaid, the new CE and Service Manager for Northern Ireland.

Dan Perry
Director, Product and Marketing, Janet

Contents:

High capacity network
increased benefits

Many public and private organisations across the research and education community are learning that they are eligible for self-funded Janet connections; an opportunity made possible due to them offering significant public benefit through teaching and learning services.

All organisations strive to reduce costs and maximise productivity, many benefit from advanced multimedia services enabled by the sheer power, speed and reliability of the Janet infrastructure. The Janet network satisfies one of the world's most demanding user communities but has sometimes been perceived as expensive by self-funded organisations.

However, the recent network upgrade and launch of Janet6 has naturally led to a review of the charges, paid by our self-funders, for using the Janet network. A recent study into market prices plus a review of Janet connection costs concluded that while the network already represents good value in many cases, there remains an opportunity to make it more cost-effective for organisations to deploy additional connections to improve performance and resilience. This makes significant cost savings possible through facilitating the adoption of Cloud services while meeting the business continuity requirements of ISO 27001.

While the Janet6 infrastructure and ongoing regional network upgrades are boosting the performance, efficiency and agility of the network, direct peering with the Amazon, Google and Microsoft™ Clouds is saving on transit fees. As with other initiatives, such as Business and Community Engagement, e-Infrastructure and Janet Connected, we are confident that this review will shortly deliver similar benefits to the whole community.

The feedback we are receiving from across the community confirms that having a Janet connection provides many benefits including those gained from inclusive services, such as videoconferencing, wireless roaming, information security and Business and Community Engagement.

> " An opportunity to make it more cost-effective for organisations to deploy additional connections to improve performance and resilience "

To confirm eligibility and learn more about how Janet can help your organisation improve services and save money, please email connect@ja.net or visit www.ja.net/products-services/janet-connect

Archiving your data
securely

/Arkivum
Every bit archived

Technology is vital to research and education but it is now generating a deluge of data. This data not only produces a challenge in terms of storage, but also it is often of a sensitive nature or has potential long-term value, so measures need to be taken to ensure it is archived securely.

Janet has been working with a variety of suppliers to address some of the challenges faced by research and education – reliable digital archiving is one of the areas that is seen as a priority. In the autumn of 2013 we ran a competitive OJEU-compliant procurement to help our customers address this need. Arkivum was chosen as the supplier who best met the sector's requirements.

The agreement with Arkivum covers purchases of their digital archiving service by Higher Education, Further Education and Specialist Colleges and Research Council establishments in the UK, and by any other bodies whose core purpose is the support or advancement of the research and education sectors. It allows all qualifying organisations to procure the archive service quickly without the administrative overhead and costs of an EU-compliant competitive tender.

> "It allows all qualifying organisations to procure the archive service quickly without the administrative overhead and costs of an EU-compliant competitive tender"

Jim Cook, CEO, Arkivum commented 'We are delighted to have this framework agreement in place with Janet. Based on this agreement, organisations will be able to make the most of a well-used and understood process and know that they are getting competitive and pre-negotiated education prices based on the total size of the community and not just the size of their particular organisation.'

By using the Arkivum service, users will enjoy a fully-managed and secure long-term data retention capability. This is accompanied by a guarantee of data integrity, as part of a service level agreement backed by worldwide insurance.

The framework, launched on 20 December, will last 10 years, reflecting the long-term nature of archive services.

Key features of the service include:

- a 100% data integrity guarantee
- 2 UK-stored data copies accessible online
- 1 UK-stored copy held with 3rd party ESCROW data holding company
- £5m - £100m professional indemnity insurance
- ISO 27001 compliance

For more information, please visit www.ja.net/products-services/janet-cloud-services/data-archiving-framework

Re-procuring
Janet txt

Following a rigorous re-procurement process, Janet has re-awarded the contract to provide the Janet txt SMS service to PageOne for a further four years. Service capability, resilience and ISO 27001 data security were key considerations in the decision-making process.

Janet txt is a feature-rich suite of secure one and two-way SMS-based messaging services, designed to help educational establishments communicate more effectively through SMS. From day-to-day administrative messaging to reminders, marketing campaigns and crisis management communications, Janet txt offers a low-cost channel to connect with students, colleagues and parents.

Organisations rely on Janet txt to deliver vital information and University of Strathclyde is just one example of how the service can form part of a robust business continuity communications strategy. Messages were sent out to more than 16,000 contacts during a major campus fire, alerting them to the disaster and advising students and staff of arrangements for the following day.

The new contract is set to commence on 1 May 2014 and will deliver a new lower SMS price, lower optional service charges and a host of new functionality, designed to enhance user and customer experience.

For more information on Janet txt, visit community.ja.net/library/janet-txt-buyers-guide-0 for the Buyer's Guide or to learn more about the service, visit www.pageone.co.uk/services/janet-txt

Janet txt will also feature in a number of discussions at this year's Networkshop. To learn more about Networkshop42, and how you can get involved, visit networkshop.ja.net

PageOne

Reduce costs and save time with the Janet Telephony Purchasing Service

When we consulted with you on telephony, you reported that the biggest driver in initiating a change in service delivery was the need for a reduction in costs. In response, we launched the Janet Telephony Purchasing Service in August 2013 to make change possible.

The service itself enables you to not only use existing connections to carry telephony traffic (as an alternative to traditional, expensive, ISDN circuits) but also purchase a wide range of telephony services and products from pre-approved and pre-qualified suppliers. The products and services can be anything related to telephony, from traditional ISDN lines and PBX equipment to SIP Trunks and mobile telephones.

How it works

The service conforms to EU Procurement Regulations and has a straightforward purchasing process. As a customer, you simply create a short document outlining what you are seeking to purchase; in procurement terms this is called a Simplified Notice. The Simplified Notice is then submitted by us onto the Dynamic Purchasing System[*] which notifies suppliers that a customer has an intention to purchase. Suppliers are then allowed 15 calendar days to notify us of their intention to supply.

Once the 15 day Simplified Notice has expired, you will create an Invitation to Tender (ITT) notice which we will submit onto the Dynamic Purchasing System. The ITT will include all of the information normally required for a

purchase, e.g. current equipment on premises, number of users, and the requirements you are seeking to address.

In any purchasing environment, we recommend that you ensure specific requirements are included in the purchasing documentation, addressing requirements in terms of security, emergency service provision and disaster recovery.

Telephony suppliers and our requirements

Pembrokeshire College recently migrated to SIP Trunks, purchased through our service, and subsequently achieved an annual saving of £15,000: a 50 percent reduction in the College's costs.

We currently have three suppliers directly connected to the Janet network (see logos below) and three resellers: Maintel, Freedom Communications and Focus4U.

To ensure that any products and services purchased from the Janet Telephony Purchasing Service are aligned with your needs, we are providing telephony related technical expertise and procurement assistance. We have mandated a number of entry criteria that suppliers must agree to before they can join the service, these include:

- full EU procurement compliance (this will save approximately 2 months from a customer led procurement)

- two geographically separate 1 Gbit/s circuits connected to Janet

- the delivery of telephony services (SIP Trunks) over Janet without the need for separate IP connections or network Quality of Service

- the ability to zero rate call charges between devices purchased from a single supplier. In essence this means that if you buy landlines, ISDN or SIP Trunks and mobile phones from the same supplier, calls to and from the landlines and/or mobiles are not charged for. We carried

> "Using the Janet Telephony Purchasing Service made the whole process timely and painless. The Service mitigated the perceived risk of moving towards Internet-based telephony services"

Matthew Marl, IT Manager at Pembrokeshire College

out some bill analysis with customers and it showed that a significant proportion of per minute charges were between organisations' own landlines and their mobiles

- carrying out pre-install testing and resolving issues before service installation

- having the ability to pro-actively monitor, identify and diagnose faults with services

We are working closely with a number of additional suppliers who we hope will be able to offer services in the next few months.

To make an enquiry, please call 0300 300 2212 or email service@ja.net

www.ja.net/telephony

* A Dynamic Purchasing System is different from traditional purchasing frameworks as it enables suppliers to join at any stage over the four-year agreement, ensuring new products and services are available to customers as soon as they are launched by suppliers.

Industry best practice

the next step for Janet

Implementing industry best practice is not a new activity for Janet. Since 1998, we have been externally certified to ISO 9001. This international standard provides a framework in the form of a management system that enables us to improve our processes, product and service quality, customer satisfaction and productivity.

> "We have taken the decision to work towards ISO 27001:2013, a management system that enables an organisation to identify and analyse risks to information security"

Our established management system provides a mechanism that ensures best practice guidance, either in the form of an ISO standard or other methodologies, such as PRINCE2 or ITIL, can be incorporated into our processes. A recent review of the Janet Service Delivery environment highlighted that many aspects of ITIL have already been incorporated into our processes. Following this review, further steps are being taken to harmonise our existing terminology with that used in ITIL, and in line with IT Service Management (ISO 20000-1:2011).

Building on this crucial work, we have taken the decision to work towards ISO 27001:2013, a management system that enables an organisation to identify and analyse risks to information security, which are then managed through a series of controls. Whilst we already undertake some ISO 27001 activities in direct response to our business requirements, we wish to gain formal certification against ISO 27001:2013, in addition to maintaining our existing ISO 9001 certification.

Information security is an issue that impacts individuals and organisations, and a recent report conducted by BIS[1]

showed that over 93 percent of large organisations and 87 percent of small businesses have suffered a security breach within the last year.

As with any implementation there will be many challenges; from ensuring that any processes introduced or amended to meet the requirements of the ISO 27001 standard also continue to support our core activities, to making sure that our services continue to fulfil our customers' requirements. The external certification against ISO 27001 will demonstrate that we are managing our information security in a robust manner, providing you with additional confidence in Janet and what we stand for.

If you would like further information on the above implementation or our existing certification, please email quality@ja.net

1   https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191671/bis-13-p184es-2013-information-security-breaches-survey-executive-summary.pdf

Bringing research data together

Janet is working with six leading research-oriented organisations to procure a shared data centre facility. Working with University College London, King's College London, The Francis Crick Institute, the Wellcome Trust Sanger Institute, Queen Mary University and The London School of Economics, we aim to procure large scale colocation facilities within four hours' travel from London.

This is an ambitious project, aiming to support the requirements of research-intensive organisations, including joint research with NHS partners. It is an exciting, long term development, beginning with colocation, but likely to develop and include sharing infrastructure, support services and potentially technology or applications including:

- high performance computing (HPC) systems

- administration, teaching and learning systems

- other research systems that may have a requirement for higher levels of data confidentiality

While it is anticipated that other universities, institutes, colleges and NHS partners may wish to use the facility in the future, we expect that the first tenants will move in during the latter half of 2014, and that usage will grow to between 500 and 1000 racks, and between 7MW and 14MW, after three to five years.

In addition to leading the procurement, Janet is investing to ensure that this facility is part of the Janet backbone, building on our converged infrastructure to support UK research and education.

To find out more information, please email dan.perry@ja.net

v-scene

Introducing the new Janet Videoconferencing Service

We are reinventing the Janet Videoconferencing Service. The new v-scene service aims to make life simpler for anyone who needs to meet, collaborate with or teach people based off-site. So, we are redesigning the service from the ground up with your needs in mind. Our approach is intended to ensure we maintain and improve the features you love, simplify some aspects and even add some new capabilities.

Modernising the service is a response to a strongly growing trend that we are seeing: remote conferencing and collaboration is a key asset to your business and is increasingly becoming embedded in teaching and learning. We have created a panel of users, selected from every part of the research and education sectors, and let them loose on testing our early designs. Some users were working from previous experience with the existing Booking Service and others were new to the concept, but all provided plenty of constructive feedback on the wireframes.

Best of breed

From behind the new interface, in addition to the usual benefits of videoconferencing, v-scene will offer you:

- interoperability with key video systems – conference with almost anyone, anywhere, on a large variety of standards-based video clients

- an automated testing process, backed up by a dedicated, friendly and experienced support capability that knows the education sector

- detailed reporting available to you on demand. Get a clear picture of exactly how videoconferencing is used in your organisation and department, and identify where you could exploit it more fully

- an ongoing development roadmap that will listen to your requirements and help you realise solutions to your problems. For example, do you want to be able to launch a tutorial session with your students from within your VLE? We could help to make that happen

- the ability to bring your existing videoconferencing kit up-to-date by adding v-scene for a better user experience

Setting the standard

The existing service is already acknowledged as a highly effective platform for managing videoconferencing, but we want to push the boundaries even further. We want to share its benefits, and in the process make it easier for you to collaborate with your peers internationally. So, we are going to make v-scene available to other National Research and Education Network providers (NRENs).
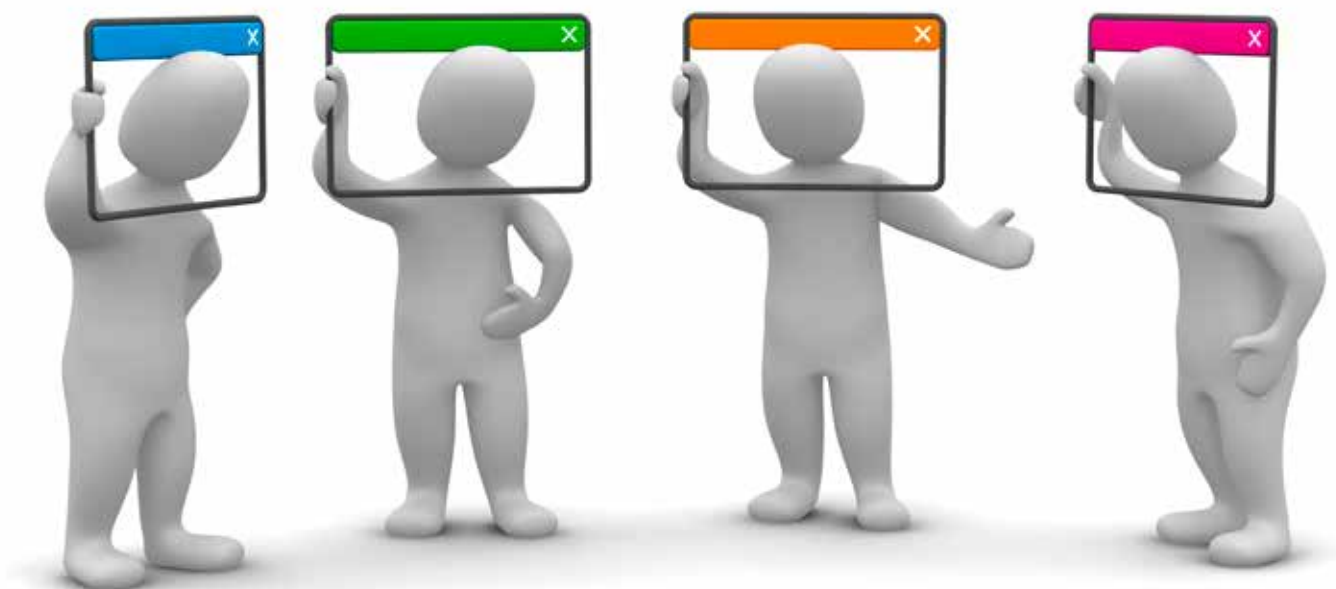
Indeed, a number of other NRENs have already expressed interest, and for the last six months HEAnet, the Irish NREN, has been piloting the service with their customers. Based on this experience, and a sneak peek at our future plans, HEAnet will offer the service to their customers from January 2014. Janet also plays a leading role in helping standardise the way videoconferencing systems interoperate (through the Global Videoconferencing Alliance) and are deployed across Europe (through eduCONF).

No extra cost

Janet is very pleased to announce that v-scene will be part of the essential core services that are bundled with your Jisc subscription, and that there will be no separate videoconferencing subscription or charging model for Jisc-subscribed organisations. With this commitment, you can confidently continue to pursue the many benefits that video-based meeting and collaboration can bring.

The roadmap is not the territory

So when will all of these changes happen? Janet has already been through a procurement process to identify a development partner with the right mix of specialist skills, and by the time you read this article we will have contracted for and begun a year of high intensity coding and development to create the new service. We have assembled a panel of representative users from across the community to assist us, providing valuable input in

> "The existing service is already acknowledged as a highly effective platform for managing videoconferencing, but we want to push the boundaries even further. We want to share its benefits, and in the process make it easier for you to collaborate with your peers internationally"

perfecting the graphical user interface and the workflow around the tasks you most frequently need. Acceptance testing will run through early 2014 and, following a carefully controlled transition process, the new service will be available to use from mid-2014.

To find out more information, please email tim.boundy@ja.net

Shaping Sparsholt College's
IT landscape
with Janet

Although only a matter of weeks into his new role as IT Manager at Sparsholt College, Adam Plevin values how Janet's influence will help to shape the way technology evolves, for the benefit of the College, and Further Education (FE) as a whole.

SPARSHOLT
COLLEGE HAMPSHIRE

ANDOVERCOLLEGE
prepared for life

We spoke to Adam about his role and how he sees Janet supporting the College, his vision for Sparsholt College and the challenges he sees FE having to face in the future.

Adam's background is exceptionally diverse. Spending 22 years in the Royal Air Force, Adam undertook an extremely wide range of roles, including domain administration, customer support and programming. When he left, and after a six-month stint of travelling around America, the appeal of being the face of the IT department led him into his current role at Sparsholt.

Innovative learning

Set in the beautiful Hampshire countryside, close to Winchester, Sparsholt College is renowned as one of the UK's leading land-based colleges with a national and international reputation for excellence in education and training in the FE sector. Offering the perfect blend of hands-on training by experts, within industry-equivalent facilities, the College boasts a multi-million pound Sports Centre, Equine, Game and Wildlife and Aquatics Centres, alongside an Animal Management Centre with a collection of rare and exotic animals, a fish hatchery and a 400-acre

farm. Andover College (which is part of the same College), is a tertiary college with a range of practical teaching environments, ranging from creative and performing arts, media and music, engineering and motor vehicle courses, to construction, wood trades, computing, superbly equipped hair and beauty salons and science laboratories, all of which serve the extensive range of programmes and courses including A-levels and Diplomas/Extended Diplomas.

> "With the diversity of the courses available and the technology needed to enable students to learn in an innovative and industry-simulating environment, a Janet connection is vital"

> ❝ In times where technology is everything, the demands are only going to increase. Adam sees Janet as crucial to the College keeping pace with developments ❞

As IT Manager at the College, Adam heads up a team of 12, which includes two apprentices – one in his second year, and one at the end of his third and soon to be starting a full-time position. Responsible for the day-to-day running of IT at the College, Adam's role is challenging. With the diversity of the courses available and the technology needed to enable students to learn in an innovative and industry-simulating environment, a Janet connection is vital.

Sizeable demands

The College is split over the two campuses and, with a total of 7,000 students and 400 teaching and support staff, network demands are, understandably, high. Increasing demands led to new fibres and infrastructure being put in place over the last two years. Now, there is a fibre link of 1Gb between the two campuses, which are 14 miles apart, and each campus has a 100Mb link to Janet, both of which are currently being upgraded as part of the Janet South regional network re-procurement.

'The campuses being spread out geographically, means there are data connections here, there and everywhere!' says Adam. 'At the moment we have HP equipment everywhere and fibres linking the majority of our buildings. We're now in the process of virtualising everything, with brand new equipment duplicated over both of our campuses. For data resilience, we're utilising our cross-campus link, which is imperative should something go wrong.'

In times where technology is everything, the demands are only going to increase. Adam sees Janet as crucial to the College keeping pace with developments, and allowing students access to the network, wherever they are, whenever they want, and on any device.

'In the next two to three months we'll be replacing our two 100Mb links with two 1Gb connections to Janet South, which will allow us to offer more cloud-based activities, such as online exams. Alongside this, we have a project planned for this summer to move all of our staff onto Microsoft Office 365™. This is a huge task to undertake and, given the number of staff here at the College, just wouldn't have been possible without bandwidth upgrades offered as part of the Janet South upgrade.'

Laying the groundwork

The landscape of FE is changing dramatically, and Adam sees this bringing many opportunities, as well as challenges. 'What we have to provide as a College is constantly evolving. We want to deliver a single experience, so wherever our students are, and however they access the network, their experience needs to be the same. All of our students have

Microsoft Office 365™ accounts and they need to be able to gain access to their work no matter where they are or what device they are on. And the really key thing is to be able to offer this access and flexibility, in a secure environment.'

'We're making improvements to our wireless infrastructure, which is also a massive project. We're working with Hewlett Packard to develop and implement 'Bring Your Own Device' (BYOD), as a blueprint for future deployments. But, before we can even think about rolling this out, we need to really scrutinise the security aspect of it – both in terms of the information and our students. It's essential that we get the groundwork right; we need to really plan and look ahead, and we must consider how things will have evolved another ten years down the line. It's essential that what we do now will stand the test of time.'

While exciting and innovative, the BYOD initiative brings with it many challenges for Adam and his team. They are currently experimenting with a virtual desktop infrastructure solution, for both staff and students, which, although another big project, Adam says is currently 'looking good'.

'The tools we need to enable a remote working and learning environment, must be through a single, consistent model,' says Adam. 'When we rolled out Microsoft Office 365™ to the students last year, we just didn't have the capacity to do it for staff as well; now we will have.'

Mission and Values

Sparsholt College's mission is 'to inspire learners to recognise and achieve their full potential', and has a set of values, derived from the vision and viewpoints of staff:

- excellence
- integrity
- valuing others
- passion
- innovation
- supportiveness
- team work
- sustainability

Adam feels the new virtualisation project perfectly aligns with two of the College's values – innovation and sustainability. 'With a virtual environment, the systems are clever enough to power down specific areas they're not using. Pushing to Cloud does the same, which means we'll only be drawing the power that we need, with no wasted energy,' he says.

Going forward, Adam says one of the key IT objectives for the College is to improve its Service Desk offering. At the moment this is an email or telephone call system, but plans are in place to introduce a self-service element to it. Adam explains, 'If you're able to report problems yourself, the whole service becomes more transparent. It's all about improving the visibility of IT and improving communication with students in any way we can.'

Cutting edge

Sparsholt isn't just industry leading, it's unique. In the Animal Management Centre, they have successfully bred highland streaked tenrecs, a rare species similar to hedgehogs and native to Madagascar, in an amazing experience and a cutting-edge learning environment for students. And by applying vocational teaching, Sparsholt's students benefit from hands-on experience with industry-specific software, gaining valuable skills to take with them into their chosen vocation.

> " If you're able to report problems yourself, the whole service becomes more transparent. It's all about improving the visibility of IT and improving communication with students in any way we can "

Product innovation for the future

In post for 90 days as Jisc's CIO, Phil Richards shares his reflections and vision with Janet News.

Dr Phil Richards
Chief Innovation Officer, Jisc
Email: p.richards@jisc.ac.uk

Phil's passion for engaging with customers is evident from the moment you talk to him, 'My vision is for us to be much closer to our customers and put their needs at the centre of all of our research and development – delivering products developed with them, and for them, to ensure UK research and education continues to flourish.'

'I held a position as IT director at a university before joining Jisc, so had a good understanding of the kind of service we offered from the Higher Education customer's viewpoint. I was keen to quickly re-engage with the needs of colleagues working across the Further Education and Skills sectors. A number of activities, including spending time with the Association of Colleges at its annual conference in November 2013, have really helped in getting me up to speed. I have also gained an appreciation of how our work is recognised more widely in Europe and around the world, through being involved in the annual meeting of our Knowledge Exchange partnership with Jisc's sister organisations in Holland, Denmark, Finland and Germany.'

With this perspective comes a new way of working for Jisc, which will see its successful co-design pilot of 2013-2014 scaled up to become the lead methodology for innovation from 2014-2015.

Phil explained, 'I have a vision of working hand-in-glove with stakeholder bodies across the sectors we support, to co-create, co-experiment and co-deliver right across Jisc's ten strategic impact areas and its wider strategic framework.'

'The strength of the co-design approach derives from working together to find solutions to many everyday challenges through digital technologies – solved and developed with, for and by the sector', he added.

'In the future our successful co-designed research and development work will be handed over to our service delivery teams. These are Jisc Technologies, of which Janet is part, and Jisc digital content and discovery, including Jisc Collections. Our customer engagement teams and regional support centres will also be crucial in delivering our products and services to our customers.'

'This is an exciting time to be part of Jisc, with its new portfolio of research and development being built on real consensus across our sectors, based on our customers' needs. I am looking forward to seeing what we can create together, to underpin the next generation of Jisc products and services, within a three year timescale and beyond.'

> " This is an exciting time to be part of Jisc, with its new portfolio of research and development being built on real consensus across our sectors "

Janet's new
File Sync and Share
Purchasing Service

Janet Cloud Services offers an integrated portfolio designed for use by organisations in UK education including a data centre and storage framework, Financial X-ray, tape archiving and specific sector agreements for Google Apps for Education™ and Microsoft Office 365™.

The latest service is for sharing files and online synchronisation, called **File Sync and Share**, and is similar in nature to that of Dropbox™.

The starting point for setting up a File Sync and Share Service was driven by a need in Further and Higher Education to access Dropbox-like facilities, but with appropriate safeguards in place, particularly regarding data protection and data storage. This requirement meant that Janet began to look at using our collective power to negotiate a favourable sector agreement, over and above that of the supplier's standard T&Cs, as we have in place with Google and Microsoft®.

Following detailed analysis, we concluded that the market of file sharing and synchronisation is evolving fast and that it would be inappropriate to set up a framework with a pre-selected set of suppliers and products. Instead, a dynamic purchasing system (DPS) has been created which allows suppliers to join at any time and has the advantage of supporting products of this nature as the market evolves.

To ensure maximum benefit for customers, Janet has enforced a number of financial and technical entry requirements that any supplier must fulfil before joining the DPS. This approach ensures reliable and consistent service delivery as well as legal and contractual T&Cs which are compatible with European (UK) law and directives.

To facilitate the best possible delivery of services through the DPS, suppliers must be connecting directly to Janet, connected at a suitable Internet Exchange or via a GÉANT partner, to ensure maximum performance that scales with increased demand.

Within the commercial market there are a host of products, offering different types of file sync and sharing. For this reason, and to simplify the buying process, we have specified that the requirement of a service should include the basic sync and share (supporting storage of all commonly used data files and objects). For an enhanced product, suppliers can provide one or more of the additional lots:

- EEA (European Economic Area) storage - for Data Protection compliance
- user managed encryption - encryption keys are managed by the customer
- integrated federated access - end users can access services using institutional issued credentials

This service will also be available to customers of other European National Research and Education Networks (NRENs).

To find out more information from the Cloud Services team, please call 0300 300 2212 or email service@ja.net

Broadening opportunities in

China

> "This landmark agreement will greatly improve the ability of institutions in the UK and China to develop their international partnerships"

A 2012 survey by the Quality Assurance Agency for Higher Education found that 70 UK organisations were providing education in China. With over 33,000 students studying in China and a reported 275 partnerships with 186 separate Chinese organisations, China is the UK's third largest partner, after Malaysia and Singapore, in Transnational Education (TNE).

> " This Strategic Alliance supports our
> important research collaborations with
> China and creates new value for the UK and
> Chinese Higher Education communities "
>
> Tim Marshall, Executive Director,
> Jisc Technologies & CEO, Janet

In the first agreement of its kind between two national research and education networks (NRENs), Janet and CERNET have forged a Strategic Alliance to greatly improve the support for TNE activities by enabling the use of the existing 10Gb/s London-Beijing ORIENTplus connection.

Both NRENs are committed to exploring new ways in which they can help their communities collaborate. 'We are very happy to see the fast growth of collaboration on education between China and the UK, and take our responsibility to serve the communities engaged in TNE very seriously.

This Alliance will definitely be the key vehicle to enhance our joint ability to enable this', says Professor Wu, CEO, CERNET.

It will now be possible for TNE-related traffic to flow across this dedicated high performance link, rather than the commodity Internet, and will enhance the delivery of TNE activities between UK and Chinese universities. By reducing latency and increasing the bandwidth available between Janet and CERNET, it will also streamline the administration and support available to these activities.

The UK is the world's second largest and fastest growing provider of international education. This landmark agreement will greatly improve the ability of organisations in the UK and China to develop their international partnerships, by providing a real boost to their existing Janet or CERNET connection.

To make an enquiry about connectivity to TNE activities in China, please email baoyu.wang@ja.net

Public access
briefing

> " Key outcomes from the briefing included the community's request for additional information, specifically from The Cloud, on detailed product and service provision as well as the commercial proposition "

Since the announcement that Janet has partnered with The Cloud to provide a public access solution, we have received a huge amount of interest from both inside and outside the community. In response to this, and as part of the planned launch activities, we held an online briefing to demonstrate how our partnership with The Cloud can support your organisation.

Within 36 hours of publicising the event we received more than 130 bookings from across the UK, which led to over 100 individuals and teams, representing all sectors, attending the hour long session.

The briefing included detailed information about the regulatory implications and technical aspects of providing public access. It was held as an open forum to give attendees the opportunity to ask about specific areas of interest, discuss requirements and learn from the experiences of others in the community. Key outcomes from the briefing included the community's request for additional information, specifically from The Cloud, on detailed product and service provision as well as the commercial proposition.

An opportunity was also identified for Janet to act as a broker in terms of developing a specific set of T&Cs applicable to the community. This is similar to our arrangements with Microsoft™ and Google and again highlights our ability to act as an 'intelligent customer' on behalf of the community.

In addition to the community interest, the announcement has also had a commercial impact with a number of other major players in the public access space now looking to engage with Janet. The arrangement was always intended to be non-exclusive in order to allow for involvement, collaboration and competition within the market. We will therefore place the identical regulatory requirements on any partner and offer the same contractual terms to ensure a 'level playing field' when engaging with a Janet Connected partner for public access.

This online briefing tool has once again proved to be a great way of engaging with the community, with many who were unable to be present viewing the recorded session at team meetings.

To find out more about public access, please email service@ja.net or watch the online briefing: www.ja.net/events/public-access-online-briefing

To contact the Janet Training team to make a request or present at an online event, please call 01235 822242 or email Training@ja.net

Janet

the power
to connect

Through its high bandwidth, speed and sharing capabilities, Janet6 has empowered a diverse range of research and education organisations around the world to collaborate, innovate and achieve more. Now fully functional, there are expansion plans in place that will see its technical capabilities evolve even further.

Development projects

One of the first projects on the Janet6 development is rolling out fibre to some strategic research facilities, including the Met Office in Exeter, the Norwich Research Park, the Hinxton Campus and, when it's completed, The Francis Crick Institute in London. By building dark fibre to these institutions and lighting it with the same transmission equipment we use on the rest of Janet, we'll be able to better serve the demanding data requirements of a range of science disciplines, such as climate and medical research, as well as bioinformatics and genome analysis.

Now that we own and manage the transmission equipment (in the past, this has always been managed by someone else – BT, Cable and Wireless, etc.) we can talk directly with the manufacturer, Ciena, and develop the network in line with the progression of the product. This means we can directly input into the equipment's road map.

As we take on the transmission layer, we need to be able to present a unified view of the network, so we're adapting an open-source network management system for the Janet IP layer, as well as displaying alarms for the Ciena equipment.

Increasing capacity

We're currently talking to Ciena about cards that can double the amount of bandwidth carried, without taking more chassis space. To do this, we'll need developments in the pluggable optics used between the routers and transmission equipment.

> "The next step is to look at how traffic has grown, in comparison to our predictions, and use that knowledge to plan for the upgrades we'll need to do over the next couple of years"

> "By building dark fibre to these institutions and lighting it with the same transmission equipment we use on the rest of Janet, we'll be able to better serve the demanding data requirements"

Beyond this, work is progressing on fitting even more capacity into a certain amount of optical spectrum and giving the spectrum more flexibility. Future developments will see variable width optical channels, which can be directed around the network, using the next generation of wavelength-selective switches.

We also need to increase the efficiency of the routing equipment. There will be at least one more in-service upgrade to the speed of the routers installed into the Janet backbone, and we'll be looking at ways to deliver traffic more efficiently.

All this means we can increase the bandwidth available through Janet, while minimising additional power and space requirements and, ultimately, the cost of expansion.

Reducing our carbon footprint

One of the major concerns for Janet is scaling the bandwidth we deliver, without requiring commensurate increases in power consumption. This isn't just a matter of being 'green' – energy is expensive and some of the telehousing facilities we use are very constrained, in terms of both power and space. When we installed the original equipment, it was based around predictions we made at the start of the procurement process a couple of years ago. So, the next step is to look at how traffic has grown, in comparison to our predictions, and use that knowledge to plan for the upgrades we'll need to do over the next couple of years.
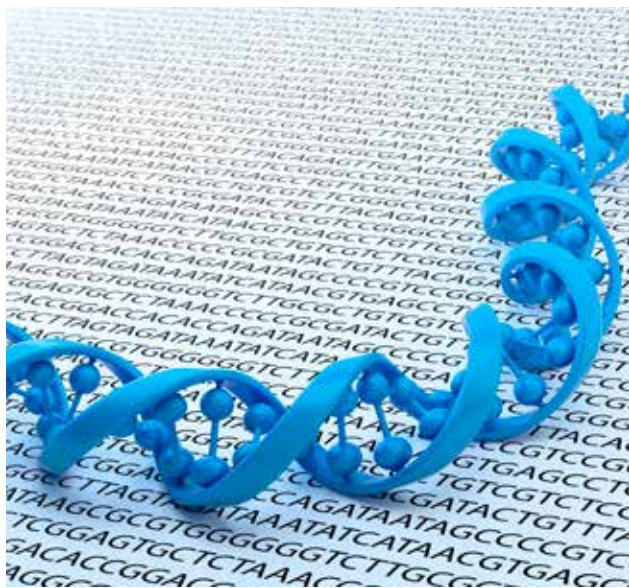
Research and education reap the benefits

From revolutionising the way students learn in the classroom, to enabling scientific discoveries in space, Janet always delivers.

Advancing Bioinformatics

As the centre for research and services in bioinformatics, the European Bioinformatics Institute (EBI) manages shared databases from the UK and around the world.

The Institute is leading the 1,000-genome project, looking at DNA samples to determine how and why diseases and cancers develop. This set of genomes is one of the largest in the world, and open to researchers on a global scale. With a single genome sequence creating 10Gbit/s of data, and technological advances meaning more sequencing can be done, more data is being created. The current petabytes of data are likely to continue doubling every six months, making on-demand bandwidth over Janet absolutely critical to this work.

EBI currently has over 180 grants, involving multi-site collaborations. And with demand now shifting into the biomedical and agricultural areas, Janet's role in connecting these partners will be key to enabling the discovery of new drugs, diagnostics and agro-chemicals.

Discoveries in space

Part of a wider, global array of radio telescopes, Jodrell Bank is an observatory that enables scientists to find out how the universe works and track cosmic images from far back in time.

From this pioneering work it is now able to combine the data from multiple telescopes around the world, allowing the observatory to track phenomena like meteors, quasars and pulsars. Understandably, this work creates huge amounts of data and demands high-speed networks to transport it. Janet, together with partner National Research and Education Networks (NRENs), enable this data to be shared and correlated for further analysis. The future will see a need for increasingly high bandwidths and speeds of up to a possible 8Gbit/s — all of which Janet will deliver.

By providing a high bandwidth network infrastructure, Janet supports valuable research collaborations in radio astronomy. Giving us critical insights into our origins and the planets around us, this knowledge will drive our civilisation forward.

> " The current petabytes of data are likely to continue doubling every six months, making on-demand bandwidth over Janet absolutely critical "

A global connection

LOLA (Low Latency) is a unique audio-visual streaming technology, enabling musicians to play together in real-time, from different locations, via high-speed networks.

Because of the speeds achieved across Janet, no quality is lost – something that wouldn't be possible using existing networks or technologies. Janet provides a robust, low latency and low jitter connection between two points, which is vital for LOLA to work. The delay when data is sent over the network is so minimal, musicians can play together seamlessly. This allows more time for rehearsals, with less expense and travelling.

With the development of this technology we hope to see more multi-site collaborations and unique performances over the Janet network.

Inspiring learning through technology

These days, teaching is a far more interactive model and the use of technology has become integral to learning.

Barking and Dagenham College is using technology to realise its vision of developing multi-dimensional students, who are fully equipped for the workplace.

Shifting away from static computers in the classroom, the College is using innovative ways of teaching, to encourage self-learning. By using Janet, students and teachers can access the College's learning platform, whenever and wherever they want to. With familiar interactive applications and cloud technologies, students are using tools from their daily lives, helping them work more efficiently and exploiting the benefits of technology.

Through this innovative work, the College has won the National Awards for Outstanding Entrepreneurship in Learning and Skills.

This ambitious vision needs a network infrastructure which not only provides fast and reliable connectivity, but also one that's always available. Which is why the College has recently upgraded both its primary and resilient Janet connections.

The heart of Great Britain

The London 2012 Olympics was the first truly digital sporting event of this age, thanks to the collaboration between Janet, the BBC and Japanese broadcaster, NHK.

Through our high-speed network, it was possible for live broadcasts to be streamed around the country and beyond. Shot in Super Hi-Vision (16 times the resolution of standard HD) the footage was transmitted to Glasgow, Bradford and London, and streamed to Japan and the USA, giving the viewer visual and audio quality, on par with actually being in the stadium.

Janet had a key role in transmitting the content from TV Centre in London, across the UK and to the worldwide networks, via GÉANT – the pan-European organisation linking national networks together.

This was a real technological advancement and stepping stone in the history of television and sport. The technology has the potential to revolutionise digital entertainment, and opens up endless possibilities across many sectors. Janet's high bandwidth and UK-wide network infrastructure has made streaming events on this scale a possibility – and the need for networks, like Janet, essential.

Ultra High Definition

The potential of Ultra High Definition (UHD) technology has recently been showcased in a demonstration held at the Digital Design Studio at the Glasgow School of Art (GSA). The GSA is one of three main Higher Education organisations across the UK collaborating on the UK UHD project, which also includes the Universities of Cardiff and Bristol.

The first part of the demonstration involved a remarkable display of the Sydney Opera House being built layer by layer in minute detail.

This amazing work, is part of the Scottish Ten project from the Centre for Digital Documentation and Visualisation, a partnership between the GSA and Historic Scotland. The project uses UHD 3D digital technology to visualise world heritage sites including Mount Rushmore in America, Rani ki Vav in India and the Eastern Qing Tombs in China. The process takes months of planning and an intense schedule to capture and document these architectural marvels in their environmental settings, and produce models using the latest 3D laser scanning to millimetre accuracy.

These models, when complete, provide a more detailed and accurate record of world heritage sites than could ever be provided from blueprints alone and, on average, generate around 2Tb of raw data. Using the 3D models,

it is possible to strip away the layers to analyse very rich data to the closest tolerances. This opens up a vast array of opportunities for future applications, ranging from tourism to architectural engineering.

The challenge for researchers involved in building these models is how to share such large, rich datasets with partners to enable further data analysis. This is where Janet comes in, as data can be shared across the network in milliseconds. The model of the Sydney Opera House demonstrated data being transmitted using a 4K stream from Cardiff to Glasgow in real-time. The sharpness of detail was truly astonishing, as if directly projected from source. As well as these more static models, the ability of highly detailed UHD images, derived from aerial photography and LIDAR (light detection and ranging), allows archaeological analysis at a landscape scale, simply impossible using standard technologies.

The full power of these capabilities could be seen by a second demonstration of the ground-breaking 3D Digital Head and Neck Platform. This was designed by the Digital Design Studio at GSA in collaboration with leading academics at the University of Glasgow Dental School and Department of Anatomy, and with key surgeons and teaching staff at the Centre for Health Science at Raigmore Hospital in Inverness. The Platform enables you to see the full-flow system of the head and neck modelled in 3D, as explained by Dr Stuart Jeffrey, Research Fellow at the GSA, 'the model has been used to train medical students in a safe and virtual environment and provides the ability to deconstruct the model layer by layer to see different parts of the anatomy.'

Whilst being talked through the demonstration by Professor Paul Anderson, Director of the Digital Design Studio, his colleague, Victor Portela was able to manipulate the model and zoom in to particular parts of the head, exposing its biological make-up – including arteries, brain, muscles,

glands etc. This data was sent via a live stream to Cardiff University where it was then transmitted in real-time back to the screens in Glasgow. With this type of technology in place, it opens up the possibilities for experts across the globe to make diagnoses in real-time and for students to build their competences using virtual patients.

'Ultra High Definition 3D digital models such as the Head and Neck Platform can revolutionise learning and research,' says Professor Anderson. 'Through Janet's high capacity data network it is possible to share this data between educational organisations in real-time and enable live, multi-site teaching using the UHD content. This is already being pioneered by the University of Glasgow Dental School with the 3D Digital Head and Neck anatomy.'

So what's next? The team have already been involved in a number of projects from architectural buildings to landscapes, aircraft, medical training, pharmaceutical modelling and oil and gas platforms, with many more in the pipeline, including a zoological project.

The team at Glasgow will be working with Janet to continue to push the boundaries of this amazing technology. The next aim is to develop the tools and interface to make using the technology even easier. Watch this space as there are a lot more developments to come.

> "Through Janet's high capacity data network it is possible to share this data between educational organisations in real-time and enable live, multi-site teaching using the UHD content"

Images courtesy of The Scottish Ten & CDDV and The Digital Design Studio, Glasgow School of Art and NHS Education for Scotland

Helping FE colleges in England

remain online

The use of the Internet is mission-critical to most organisations — including Further Education colleges. Its increasing use to enhance teaching and learning includes videoconferencing, online examinations, submission of coursework, virtual learning environments and much more.

By using it in this way, the Internet can help colleges to support inclusivity and retain students. The Internet is also increasingly being used to allow colleges to access shared and Cloud services provided over the network, including everything from support systems, such as payroll, to telephony. These services can reduce costs, provide increased functionality and improve resilience of the service as the supplier can provide the service from multiple locations on the network.

For a college to really exploit the possibilities, a reliable Internet connection is crucial. Whilst Janet is very reliable, there are occasionally actions that are outside of our control which can interrupt service, such as diggers cutting through underground fibre optic cable. It's easy to sometimes forget that we can lose connectivity for reasons often out of our control - much in the same way that we can take electricity at home for granted until something happens and we get cut off.

We believe that resilient Internet connectivity is important for colleges as it allows savings through accessing cost-effective Cloud services and the potential to reduce insurance costs associated with business continuity risks.

Jisc and Janet are very pleased to be working with the Department for Business, Innovation and Skills (BIS) to improve resilience for Further Education colleges in England. This initiative was announced by Skills Minister, Matthew Hancock, at the Association of Colleges' conference in November 2013. The initiative will provide an improvement in resilience which will help to stop issues that may occur if a college's only connection to the Internet fails. Stop for a second, and imagine life without the Internet for just one day - let alone a week!

We are procuring additional connections into Janet for colleges on the basis that BIS pays the installation and first year costs and the colleges pay the recurrent costs from then on. The procurement is underway and we are working with suppliers to find the most cost-effective connections possible. We will keep in contact with the colleges so that they can decide how they wish to be part of this initiative.

> " The initiative will provide an improvement in resilience which will help to stop problems that may occur if a college's only connection to the Internet fails "

Please contact your Customer Engagement Manager for more information. Full contact details can be found on page 39

NETWORKSHOP 43

AT UNIVERSITY OF EXETER

31 March — 2 April 2015

Make sure you don't miss out, put the revised date in your diary now!

➡ **Do you have any topics for a seminar or a training course that you would like to see at at next year's Networkshop?**

➡ **Or are you interested in presenting at this, our main networking event of the year?**

If so, simply submit a proposed title and outline of your idea along with a short autobiography.

Alternatively, you can just suggest a topic or a speaker and leave the rest to us.

Please email networkshop@ja.net with your ideas or recommendations for topics by Friday 29 August 2014

SAVE THE DATE

Protecting privacy

with federated access management

Data protection law seems to have got more complicated over the past few years. That may actually mean it more accurately matches privacy, which isn't a simple yes/no choice, and thereby makes it easier to provide the privacy-respecting services our users want.

Andrew Cormack
Chief Regulatory Advisor, Janet
Email: andrew.cormack@ja.net

When we wrote the original documentation for the UK Access Management Federation, UK data protection law had a simple binary division between personal data and non-personal data. Anything the holder could link to an identifiable individual (name, email address, etc.) was personal data and regulated: anything that the holder couldn't link, wasn't. The Federation Recommendations for Use of Personal Data reflected this split, suggesting that services could avoid data protection regulation if they only used the user's relationship with their home university or college (staff, student, etc.) and an anonymous unique identifier provided by the home organisation. Services were warned that requesting additional information would involve significantly increased obligations.

Since then, though the law's text hasn't changed, interpretations by courts and regulators have removed the sharp distinction between personal and non-personal data. The legal status of values like IP addresses and opaque identifiers, which might allow linking to an individual given additional information, is now much less clear. Different countries, and even different courts in the same country, have reached opposing conclusions on whether they are covered by data protection law.

Rather than the binary division, the UK Information Commissioner's Office (ICO) now talks much more about risk, treating different processes and information as involving lower or higher privacy risk. The data protection principles always used risk-based language – data controllers must implement 'appropriate' security measures, exports must ensure 'adequate' protection of individual rights – but formal regulations tend to use absolute terms. However, risk-based discussion is a much better way to consider benefits and expectations of processing. For example, most researchers greatly benefit from having their academic biographies published on the web. Although this formally involves an export of personal data, the ICO sees 'little further risk of misuse' from a well-known practice that individuals can opt out of [1].

A benefit/risk approach, rather than a binary division, seems a more appropriate basis for managing access to research and education services that users want or need. Federated access management can reduce information disclosure, for example, using privacy-protecting unique identifiers

> **The legal status of values like IP addresses and opaque identifiers, which might allow linking to an individual given additional information, is now much less clear**
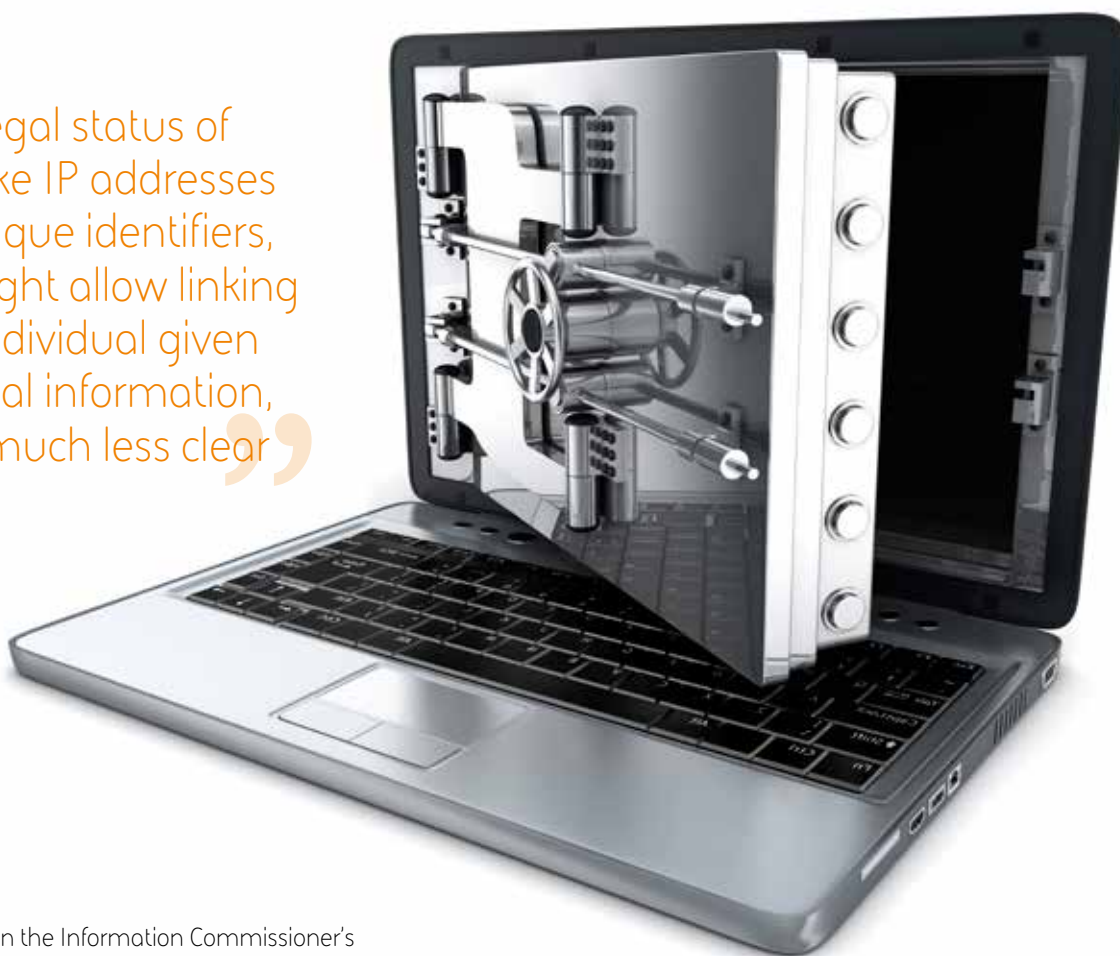
(as recommended in the Information Commissioner's Anonymisation Code of Practice[2]) rather than names or email addresses that allow users' activity to be tracked across services. Having the user's home university or college as a trusted partner means service providers need much less personal information than they would to maintain an individual account for each user. The Federation's rules further reduce the risk of privacy breach by prohibiting re-use or re-identification of user information.

The new UK Federation Recommendations on Personal Data[3] therefore suggest a benefit/risk approach to handling personal data, and discuss how the Federation's policies and tools support it. For example, a site-licensed online journal only needs to know that user "0hSRz6ZtvcUjvaA0N3ydXVQoW3c=" is a student in order to provide them with authorised access and remember their preferences between visits. Releasing the required opaque identifier and status involves very little privacy risk to the individual, their organisation or the service provider. Services supporting collaborative research do require online users to recognise and contact one another, but the small additional risk (as in the Information Commissioner's academic biography example) of releasing trusted name and email address to these services, provides more than compensating benefit to users.

We are working in the REFEDS group with other research and education federations on agreed definitions of these and other service categories[4]. These should help service providers and home organisations design their services to maximise the benefits to their users, while also protecting their privacy.

Data protection law is sometimes perceived as preventing processing of personal data, when in fact its original aim was to facilitate the movement of data that is necessary and done in a privacy-respecting way. Federated access management helps staff and students access the services they need for work and study, while minimising the risk to their privacy. The law should be a help to that, not a hindrance.

1   http://www.ico.org.uk/for_organisations/data_protection/the_guide/principle_8#assess

2   http://www.ico.org.uk/for_organisations/data_protection/topic_guides/anonymisation

3   http://www.ukfederation.org.uk/library/uploads/Documents/recommendations-for-use-of-personal-data.pdf

4   https://refeds.terena.org/index.php/Entity_Categories

Three trends in... AIM

The third in a series of articles by our Strategic Technologies team highlighting key trends in topical areas to help you identify ways to save money and resources, and improve the student experience. Mark O'Leary reflects on access and identity management (AIM).

In your role providing services to your staff and students, you have to be able to account for the usage of the online services you offer, and so must often identify your users at point of use. Done correctly, the middleware that administers authentication and authorisation checks should not feel like an obstacle. However, acceptance of traditional techniques is reducing as innovative social media and mobile devices begin to offer lower barriers to access.

So here are the trends to watch:

1. Think globally, not locally

Education has led the way in acknowledging that federated access management to resources is a better option than creating standalone services with their own task-specific authentication mechanisms, as service providers can concentrate

on delivering useful services rather than reinventing the authentication wheel. The growth of federations and prevalence of international collaborations and service provision means that there is an increasing need to allow interactions between federations – called interfederation.

For example, the UK Access Management Federation is now a full member of the eduGAIN[1] service, which enables the trustworthy exchange of information related to identity, authentication and authorisation between the GÉANT (GN3plus) partners' federations and the global community. There are more than 20 countries in eduGAIN so there is a good chance that the international collaborations your users are undertaking could be facilitated by using eduGAIN to access a service protected by another country's federation. So, consider the international reach of your AIM solution in case at some future point you wish to offer it to overseas clients or link it with some remote resource outside of your local federation.

2. The password is dying (slowly)

With the increasing ease of access to fast and powerful computing facilities, such as code optimised to run on super-fast GPUs, the level of security, offered by a readily memorable password, is perceived as being reduced. Coupled with this, and despite the increasing amounts of our lives that we entrust to online resources, the culture around password choice and security has never become widely embedded, with weak password choices, inappropriately 'shared' credentials and 'password Post-it®' notes on monitors' still common occurrences.

One response has been to adopt devices that store long and complex passwords and input them for you. This approach could relieve the memory overheads of increasing password complexity and maintain compartmentalisation of separate services by not sharing a common password. Another is to adopt multifactor authentication: many banks and other high value resources issue a device (or increasingly a smartphone app) that generates a time-limited one-time code to validate a simple password

login. This is a return to the long established principle of 'something you have and something you know', namely the key generator and the credentials.

Longer term, the 'something you have' may be a biometric mechanism such as facial recognition. This is particularly true for mobile devices, which are easily lost or stolen and therefore require protection against unauthorised access, but in practice are frequently accessed for brief periods, making repeated password/PIN entry inconvenient.

Reacting to this, organisations like FIDO[2] have observed that it's typically much easier to log into a mobile device using mechanisms like those above than it is to conventionally authenticate to an application or online resource, and they are working to standardise 'passwordless' approaches. These developments, if successful, may make significant impact in reducing the perceived tension between applying appropriate levels of security and reducing the usability of a resource.

3. The social media invasion

Almost everyone we encounter has some level of footprint in the social media space. Increasingly, this is leading to a drive for use of their social credentials as a means to bootstrap access to services in our sector, treating social sites like Facebook and Google almost as free external account management services. The debate is active. On one side there is a perception that an identity managed by a large social media entity is at least as secure as a guest account issued locally by an educational organisation, with the advantage that these companies enjoy a level of brand recognition and trust among students; on the other, the concerns about placing access decisions into the hands of corporate multinationals administered overseas.

For education, one interesting approach is Social2SAML[3] that allows the use of social identities in Shibboleth-based federations - such as the UK Access Management Federation. This is an approach that could be particularly valuable in facilitating industry participation in federated research and education contexts where they cannot register as identity providers in their own right.

> " Done correctly, the middleware that administers authentication and authorisation checks should not feel like an obstacle "

For further information or to read the Jisc AIM strategy document, please visit community.ja.net/groups/access-and-identity-management-aim

1 For more information about eduGAIN, visit http://www.edugain.org/technical/status.php or email Helpdesk service@ukfederation.org.uk
2 http://fidoalliance.org/
3 https://portal.nordu.net/display/SWAMID/Social2SAML

How Janet's
information security services
can help you

With the recent launch of Janet ESISS, there are now a greater number of more integrated ways in which your organisation can take advantage of our offerings to the community. What follows is a fictional story created from real events to demonstrate how Janet's information security services, namely Janet CSIRT and Janet ESISS, can help your organisation.

Paul Whitton
Senior IT Security Specialist
Janet ESISS
Email: paul.whitton@ja.net

Janet CSIRT continuously monitor a wide variety of security intelligence sources – amongst these is Pastebin, a popular site where many hackers publish the results of their attacks for notoriety and kudos. In this particular case, our monitoring revealed the contents of an SQL database belonging to a Janet customer.

Whilst none of the data was particularly sensitive, it did include usernames and password hashes for a web-based application. With modest computational resources, a hacker could crack the weakly encrypted password hashes and use them to launch attacks on other sites where users had reused the same credentials. You can read the password security article in Janet News 19[1] to find out more.

Within the hour, CSIRT had notified the customer that we'd located this data, and also requested that Pastebin remove this sensitive information from the website. We didn't just leave it there. We offered the customer advice and guidance to assist them in tracing through their logs and network data to find the root cause of the attack – an SQL injection (see Janet News 21[1]). This assistance enabled the customer to rebuild the application with the vulnerability fixed, and rapidly restore continuity to services.

While it was easy to fix the specific flaw in the web application's code, it is, however, usually the case that if the techniques to protect against this vulnerability were missing in one place, they may well be missing in others. Other classes of vulnerability may have been overlooked in the application's development so having secure development practices in place might provide you with the confidence that your organisation was just unlucky.

In this case, however, our customer didn't want to risk experiencing any further attacks and so sought further assurances through our penetration testing service, Janet ESISS.

After detailed discussions about the scope and extent of testing, the team undertook a penetration test to determine the susceptibility of the customer's application to SQL injection attacks.

The testing revealed a number of different points within the application where it was possible for hackers to perform this type of attack. Issues surrounding session authentication and direct access to sensitive URLs were also highlighted. Janet ESISS produced a detailed report to enabling the customer to decide how to best secure the application from future attacks and avoid a potentially embarrassing leak of sensitive data. Lessons learned through the test of this one

application were also shared throughout the customer's development team to make sure that similar problems were avoided elsewhere.

Each penetration test that Janet ESISS undertakes is carried out to a standard methodology which is maintained and improved through our ISO 9000 quality management processes. Our testing is performed using an amalgamation of industry best practices and ensures that:

- individual vulnerabilities within the system are identified and confirmed

- we help your organisation understand the relevance and impact of each of these vulnerabilities to your system

- advice and information on how to fix these issues and improve the future security of the system are provided

Penetration testing can provide you with additional assurance that your application contains none of the more common vulnerabilities that frequently lead to security compromises. Through a combination of thorough testing using sophisticated tools and thinking from the mindset of an attacker, a penetration tester can probe an application for these weaknesses.

Testing is carried out using a combination of automated and manual techniques. Automated tools cover a lot of ground quickly, saving the customer time and money and

> " Each penetration test that Janet ESISS undertakes is carried out to a standard methodology which is maintained and improved through our ISO 9000 quality management processes "

providing the tester with a high level view of the system's security. The tester can then focus their skills and knowledge on the areas of the system where their involvement provides best value for money.

This isn't the only example of where two Janet services can be used together to help your organisation. Perhaps a security incident raised questions about the resilience of your DNS infrastructure? Or perhaps you need to look at the security of your mail systems, or the terms of your contracts for cloud services?

For more information on Janet services, please call 0300 300 2212 or email service@ja.net

1   https://community.ja.net/groups/janet-news

Matt Cook wins Gold
at The Learning Awards 2014

As a valued member of the Janet Training team for over eight years, we are thrilled that Matt walked away with the Gold award for **Live Online Learning Facilitator of the Year** at the prestigious Learning Awards 2014 in February.

Up against tough competition from Happy, QA, Oracle and Dell, Matt shone above the rest to win the top award in this category. Following a live assessment in November last year, the judges were unanimous in proclaiming that Matt was 'a role model in how to facilitate a live online learning event that incorporated a high level of interaction, collaboration and discussion in the session.'

Matt has helped to build a large portfolio of training courses at Janet including live online courses, launched in 2013, to provide a series of highly participatory sessions, interspersed with practical assignments and assessments. 'The award validates the vision of the training team to deliver high quality online training to Janet customers which directly improves their day-to-day skills as IT practitioners. It is really satisfying to be a part of this activity, to share experiences and to be able to add real value in this emerging field of live online delivery', said Matt, Head of Infrastructure and Middleware at Loughborough University.

We are in the process of developing a number of new training courses which will be available later this year.

To find out more about Janet training courses, please visit www.ja.net/training

For further information on The Learning Awards, please visit www.thelearningawards.com

"I am thrilled that Matt and the Janet Training team have achieved this major success. Through their commitment to delivering the highest standards of training, we are enabling the community to offer the best facilities for students and staff, and remain cutting edge in the process"

Tim Marshall, Executive Director, Jisc Technologies & CEO, Janet

Janet Training

Janet runs a portfolio of one-day courses specifically designed 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.

The 2014 schedule can be found at: www.ja.net/training/schedule-and-booking

Virtualisation Fundamentals

15 April 2014

Manchester

This course introduces the topic of virtualisation, focusing on the successful implementation of the technology on campus networks and its impact on infrastructure and security.

Virtualisation technology has its roots in the mainframe technology of the mid-1960s but recently has seen a resurgence. Allowing multiple instances of an operating system to share the same hardware with more granular control of machine configuration and networking has huge benefits. These include cost benefits, addressing the problem of underutilised server hardware to assist with business continuity and support the increasing green agenda.

From exploring virtualisation and its applications to troubleshooting virtualisation issues, the course provides a solid foundation for those interested in Virtualisation Technology.

Hands-on Digital Forensics

5 June 2014

Newcastle

This course introduces the topic of digital forensics and the use of this technology within the IT industry. It provides an overview of digital forensics, evidence and computer crime.

An introduction to incident response is given, followed by the practical acquisition and preservation of digital data. Once the digital data has been acquired, analysis of the data is performed before looking at mobile devices, forensic circumvention methods and into the future of digital forensics. The practical focus of this course is the use of open source tools which can be used in a number of scenarios to assist with the networking and security work undertaken by members of the Janet community.

This course will support those who are incident investigators in their network environment to become aware of digital data, its uses, collection and preservation.

DEVELOPING YOUR WHOLE TEAM?

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CUSTOMER ENGAGEMENT TEAM PROFILES

Noel McDaid

I joined Janet in February 2014 as the Customer Engagement and Service Manager for Northern Ireland.

For the past 17 years I have worked within the education sector as a Systems and Network Engineer with North West Regional College and Technical Advisor for Jisc RSCni. During this time, I have developed an extensive knowledge and built significant relationships across the Northern Ireland FE and HE communities.

Over the next few months I will be establishing myself as the Northern Ireland Janet representative through meeting all Janet customers and creating the Northern Ireland Janet user group to provide a forum for developing the Janet network and services in the region. In addition to these meetings, there will be a range of physical and online Janet information and service events.

Outside of work I have a passion for all things gadgetry, and am developing an interest in amateur astronomy when my family, and more importantly weather, permit me!

Be part of the conversation

Community.ja.net

Join the Janet News Group to suggest your ideas for future articles
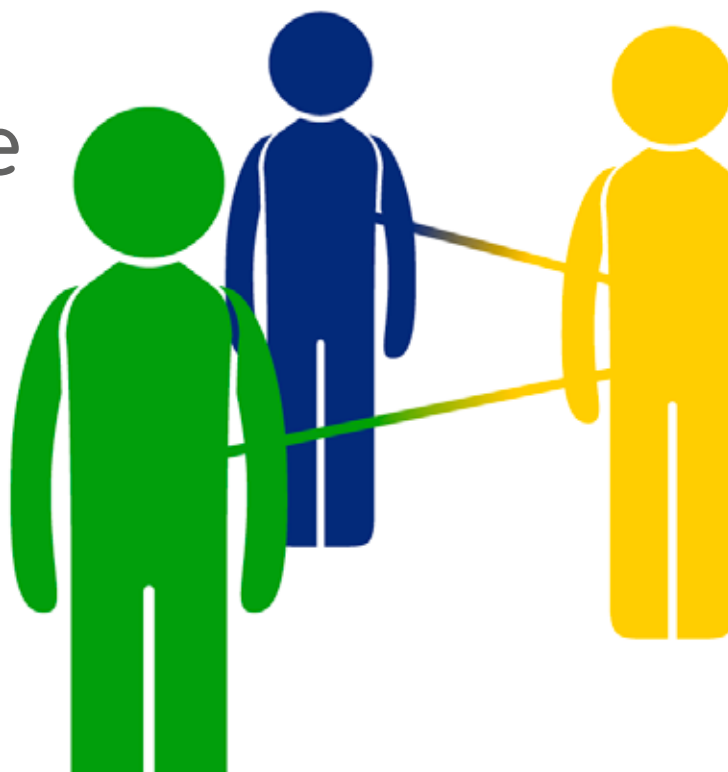
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For the latest news from your CE
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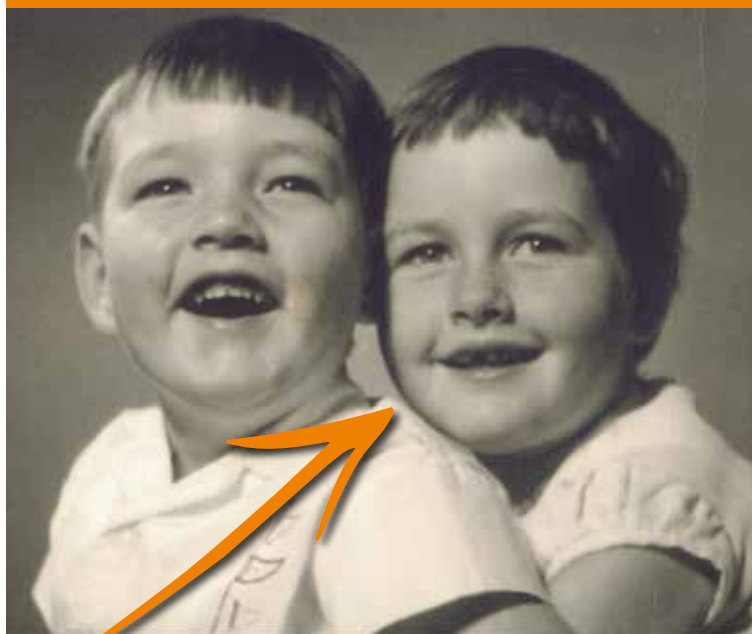F: 0300 300 2341
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JANET COMPETITION

To celebrate Janet's 30th birthday, here's a photograph of one of our longest-serving employees. But who is it?

Send your answer to marketing@ja.net with the subject line 'JN24 competition' by Friday 9 May 2014 (and please include your postal address).

Please note: the winner will be chosen at random; we will only contact the winner; the answer will be posted on the Janet News Community Group on Friday 16 May 2014; Janet staff and members of the Jisc group may not enter.

community.ja.net/groups/janet-news