



JANET News

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Editorial

This editorial is being written on the two hundredth birthday of two men who shaped our modern world but sadly never met – Charles Darwin and Abraham Lincoln.

As Darwin well knew, the organism that survives is the one best suited for its environment. If the environment changes then so must the organism, enhancing existing features or developing new ones that weren't there before. Various stories in this issue show that JANET continues to match this description very nicely.

A technical guide on secure virtual private networks has been updated and reissued with new sections on the SSL protocol, which has emerged since the guide's first publication as a leading international standard. A pair of Calls for Participation have gone out for trials in two areas: a wireless LAN programme and Carrier Ethernet. The more extreme environments in which wireless technology is being used are starting to outstrip the specifications of conventional wireless equipment and so alternatives must be developed; and Carrier Ethernet looks set to be the next backbone technology, running at 100Gbit/s, for when our current 40Gbit/s is exhausted.

Underpinning all this activity is the successful completion of the project to upgrade the JANET backbone to 40Gbit/s circuits, which proved very useful as traffic surged to 17Gbit/s during the inauguration of Lincoln's latest successor, the *other* inexperienced Senator from Illinois who unexpectedly became President of the United States. (This was not a factor in the original planning, but might give pointers for January 2012 – which of course will also be the year of the London Olympics, when we can also reasonably expect considerable traffic demand.)

The applications and developments are driven by the needs and expectations of our users; the backbone upgrades themselves are driven by the applications and developments. That is how JANET continues to evolve to suit its environment.

The environment itself, worldwide education networking, is also changing, and that is why our lead story in this issue (page 4) is the evolution of European education and research networking represented by the proposal for GEANT3. GEANT is the network that connects the European research and education networks, 37 in total and representing many millions of users. Under the new programme, both the network itself and the programme of activities associated with it will be developing to a new level.

In other words, JANET does not work in isolation and it would do it little good if it did. A world class 40Gbit/s network stuck on this side of the English Channel would soon get very lonely. GEANT and the European NRENs have their own development programmes, with everyone providing spin-off benefits for everyone else. JANET is proud to belong to this thriving, dynamic community.

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The Past Comes to Life at BETT



The JANET Stand at the BETT show was a little more surreal than usual this year. The antithesis of mundane, the exhibition as a whole was its usual sensory clash of strange noises, bright colours and this year even included men dressed as USB memory sticks! JANET(UK)'s extra splash of surrealism came from the giant images emerging from the JANET stand to demonstrate the variety of videoconferencing content available. The stunning images towered over the staff and guests as we chatted about videoconferencing or JANET Collaborate, and caught the eyes of passing delegates (no mean feat in the multimedia deluge that is the BETT show). The usual network or VC-related discussions were often kicked off with a comment along the lines of 'why the dinosaur?' or 'Is that a Van Gogh?'

With such unavoidable visual clues no one could accuse JANET of being solely focused on the technology. With interesting live debates and contributions by a plethora of

videoconference providers such as the National Space Centre, the Wordsworth Trust and The Holocaust Centre it felt as if there was hardly a topic we didn't breach. The Suffragette, played by an Education Officer at the Beamish Open Air Museum in Durham, did a fantastic job of stoking the fires of debate with an on-stand, tongue-in-cheek debate about women voting. Other examples of videoconferencing content were delivered by the Natural History Museum, The Beacon Museum, The National Archives, The National Coal Mining museum for England, The National Maritime Museum and Touch the Sky Ltd. We were even joined in person by 'Commanders' from the National Space

Centre's Education Team and the character of Lord Hastings, Coal Mine owner.

All in all, it was a great pleasure this year to see the whole subject of videoconferencing coming to life. The technology is becoming less of an issue and teachers are now more confidently turning to videoconferencing to provide curriculum-based content. We heard the focus of questions move from 'I've got a videoconference system, but I don't know how to work it,' to the much more positive 'I've got a videoconferencing system, what can I do with it?' With the JANET Collaborate prototype site available to show delegates how to find great videoconferencing content, we managed to inspire teachers and school IT managers with new ideas and examples of exciting content that they can now access via videoconference.

The JANET Collaborate prototype site can be found at www.janetcollaborate.ac.uk, and more information on the JANET Videoconferencing Service is available at www.ja.net/jvcs.

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Research and Education today is undoubtedly a global activity for which specialised network connectivity plays an essential support role. Researchers have always collaborated internationally, but with universities increasing the use of distance learning and in some cases setting up campuses in other countries, education is now becoming genuinely trans-national. Equally, research activity is by its very nature global, both in terms of international collaboration between practitioners and in the increasing trend to build large-scale scientific facilities on an international scale.

To provide this network connectivity, many countries across the world have an established National Research and Education Network (NREN) and of course for the UK that is JANET. A number of networks in the world have also been established that interconnect NRENs, such as RedClara, connecting Latin American NRENs; APAN and TEIN, connecting NRENs in the Asia Pacific region; and GEANT, which connects 37 NRENs in Europe, one of which is JANET.

The GEANT network is funded partly by the European Commission and partly by subscription of each participating NREN. The GEANT project is not just about network infrastructure: there is also an associated innovation programme which ensures that the network is fit for purpose, meeting the often advanced requirements of those that use it.

The GEANT project is managed on behalf of the European NRENs by a Cambridge based company called DANTE, which was established by the NRENs in its current form in 2000. The project is currently in its second iteration – GEANT2 – and a proposal for GEANT3 was submitted by DANTE and the NRENs to the European Commission in December 2008 with a view to the project starting in April 2009. GEANT3 will be an evolution of GEANT2, both in terms of the network provided and more particularly in terms of the

European Research and Education Networking evolves

associated innovation programme. Both will build upon the achievements of GEANT2.

JANET(UK) is contributing to a number of areas of GEANT3 and in particular Josh Howlett from JANET(UK) will lead activities in the area of federated end-user services – the inset text (opposite) gives more details. This will complement the ongoing development of the UK Access Management Federation and the JANET Roaming service, both of which will benefit from integration with similar services across Europe and further a field.

We are looking forward to taking an active role in GEANT3 to the benefit of JANET users in the international context of research and education.

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JANET Roaming



One of the areas affected by the work on GEANT3 is eduroam, and by implication the JANET Roaming Service. If you are unaware of what this service can offer you then read on!

The JANET Roaming Service enables users from any participating organisation to use guest networking services at any other participating organisation. Once authenticated, users gain access to the Internet or external services provided by their home organisation. Currently there are 98 organisations in the UK connected to JANET using the service.

There are many benefits of using JANET Roaming. For example it enables you to use the network for tasks such as e-mail access and web browsing when away from your home organisation without having to make prior arrangements for a guest account,

carrying proof of identity, or paying for commercial services. Instead, your familiar 'home' credentials authenticate you to educational network services both across the country and internationally.

JANET was one of the original group of NRENs that formed the eduroam confederation which has resulted in JANET Roaming and similar initiatives in other countries now being able to provide an extended service worldwide. Users from UK-participating organisations can gain network services in 32 European countries, Australia, China, Taiwan and Canada.

If you would like more information on JANET Roaming and how organisations can participate then take a look at the JANET web at www.ja.net/roaming.

From 1 May 2009 JANET Roaming will no longer support web redirect authentication systems. The JANET Roaming Technical Specification has been updated accordingly. Version 1.1 is now available at:
<http://www.ja.net/documents/services/janet-roaming/techspec.pdf>

GEANT3 Federated End-User Services – Vital Statistics!

The activity is composed of three work areas:

1. The work area, European PKI Co-ordination, will facilitate access to and use of Public Key Infrastructure services. This work will include the establishment of a policy management authority that will accredit national PKIs; a central repository to host trust-anchors and Certificate Authority (CA) policies; and a centrally-operated CA that will issue certificates to end-users who are otherwise unable to acquire one from a local CA. This work is an essential underpinning of many authentication and authorisation services, such as those being developed in the rest of this stream of activities.
2. The second work area, eduroam, will manage and further develop this roaming service which allows a member of any participating institution to visit another participating institution and gain network access, simply by using their home institution login and password and without prior arrangement. (In the UK this service is known as JANET Roaming, see page 4.) It is anticipated that the task will focus on further extending hotspot coverage across Europe and globally; the development of more powerful end-user tools; and managing the transition from RADIUS to RadSec, an improved version of RADIUS that was developed during GEANT2.
3. The third work area, eduGAIN, will establish infrastructure that was developed during GEANT2 to inter-connect the numerous identity federations, such as the UK Access Management Federation, that have been established in many European countries in the last few years. This will allow the end-users to use identities issued by participating NRENs and organisations to access resources across Europe.

iArriba AGREGA!



JANET(UK) has recently signed an agreement with the Spanish Government to take AGREGA, its recently developed digital content management system, as the basis of a National Digital Resource Bank for UK teachers to share publicly funded digital teaching and learning resources developed by schools, charities, industry, Local Authorities, City Learning Centres and colleges.

The system, written in open source software, will be hosted by JANET(UK) on the National Education Network and will thus be freely accessible to all teachers in England and the devolved administrations. The system meets the exacting requirements that have been developed by a consortium of more than 100 Local Authorities without the need for expensive and time-consuming development, and we believe is an excellent example of international co-operation between our two countries.

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New Number for JANET Service Desk

JANET Service Desk has changed its contact telephone and fax numbers to take advantage of the new 0300 numbers. JSD can now be contacted on 0300 300 2212 or faxed on 0300 300 2213. These numbers only apply to callers from within the UK.

0300 numbers are available for the public sector and, unlike numbers with an 08 prefix, they cost the same to call as landline numbers, even from a mobile phone.

The new numbers completely replace the old 0870 numbers, which will shortly be cancelled.



JANET Weathers the Storm

Normal JANET service in the first week of February continued uninterrupted through England's worth snowfalls in 18 years.

First snow hit London on 2 February, bringing the city to a standstill and providing the first real test of the JANET Business Continuity Plan (BCP). This was developed over six years ago to cover possible problems that could take place at either Lumen House in Didcot or the offices at Grays Inn Road in London. Parts of the plan are regularly tested to ensure that equipment works correctly, generators can be used to run the basic IT of each office, and staff are aware of their roles in the plan and any relocation of key staff that may have to take place.

A BCP situation was first called for the Grays Inn Road office on 2 February, then for Lumen House staff on 5 and 6 February when snow in Oxfordshire prevented them from safely reaching the office. In both cases services to JANET customers continued without interruption. Key roles were reassigned, staff were able to operate



remotely and phones were diverted to the office that had managed to stay open.

The BCP worked exactly as planned at both locations, though a review of the events will take place shortly to look at where any improvements could be made. Our thanks have to go to staff who ensured the continuity of the JANET service during the problems with the weather:

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If You're Not On the List, You Do Get In

The JANET DNSBL (DNS Blacklist) has expanded its portfolio to include SURBL, another leading resource that lists web addresses which have appeared in unsolicited messages. The service already offers JANET-connected organisations easy access to Spamhaus and MAPS lists.

The addition is because SURBL has recently changed its usage and licensing model to raise funding that will keep the project effective and sustainable. As a result the use of SURBL lists will become chargeable for organisations with more than 1000 users. JANET(UK) took the decision to subscribe to SURBL on behalf of all JANET customer organisations.

Unlike most blocklists, SURBLs are not lists of message senders but of URLs, some but not all representing undesirable sites, which

have been seen in e-mail messages identified as spam or phishing, or otherwise identified as dangerous. Links seen in such messages tend to be more stable than the rapidly changing botnet IP addresses used to send the vast majority of them. The Spamhaus and MAPS sender lists can be used in a first stage filter and the SURBL lists can help in a second stage filter to find many of the otherwise difficult, remaining unwanted messages.

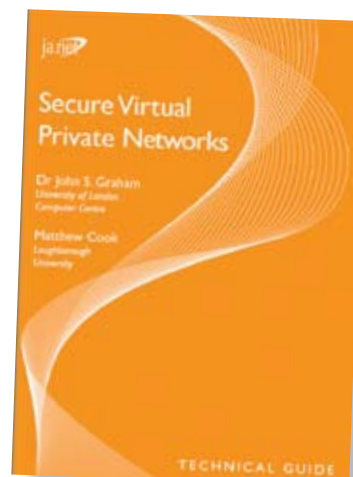
More detailed information can be found at:

- JANET DNSBL service: <http://www.ja.net/services/mail/janet-rbl/janet-dnsbls.html>
- SURBL: <http://www.surbl.org/>

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Secure Virtual Private Network: now with SSL

JANET(UK)'s 2003 technical guide *Secure Virtual Private Networks* has been updated and reissued. The new edition includes extra chapters by Matt Cook, Network & Security Manager at Loughborough University, on the SSL standard. Since the guide's first publication SSL has emerged as a leading international standard along with IPSec.



The new chapters cover the three main types of SSL VPN: the web-based portal, the Network Connection SSL VPN and the Virtual Desktop. Another new chapter covers the SSL configuration of a Cisco ASA 8.0 platform, while coverage of IPSec is broadened with a new chapter on configuration of Linksys routers as IPSec wireless endpoints.

Earlier chapters introduce the reader to VPN technology and cryptographic techniques, and go on to cover public key infrastructure and authentication, tunneling, and the architecture and implementation of IPSec.

The URL of the new version remains unchanged: the guide can be downloaded from: <http://www.ja.net/documents/publications/technical-guides/tg-vpn.pdf>

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Shared online TV and radio recording and archive access system

A new service now rolling out to universities and colleges in the UK lets authorised online users schedule recordings from any freeview channel, make recordings from last week's broadcasts, and view these recordings anywhere in the UK.



BoB (box of broadcasts) National is a shared online off-air recording and archive access service available to staff and students of member organisations of the BUFVC (British Universities Film & Video Council) who hold an ERA+ (Educational Recording Agency) licence. It allows an organisation's staff and students to record and keep programmes from most channels in freeview radio and television, create and share playlists and extracts from programmes, and rate and comment on them. The only requirements are a broadband connection and a web browser with flash player. The recordings stay available as long as required.

A requested recording is made available as a flash file soon after broadcast. The programmes are watched in a web page in a manner similar to BBC's iPlayer streaming service, stored in the archive and held indefinitely for all users



to enjoy. The BoB archive currently offers some 30,000 TV and radio programmes.

By using a shared service organisations may access not only programmes selected by their own users but also those requested by all other BoB users nationally. Likewise, a lecturer can ask students to view or listen to a set of programmes by sharing a playlist URL, and shared playlists created by other universities or colleges will also be available to search and use as a local resource.

For further information on how to obtain 30 day trial access to BoB National (whether or not your organisation has an ERA+ licence) please contact the British Universities Film & Video Council (BUFVC) on bob@bufvc.ac.uk.

www.ja.net/jvcs.

JANET Traffic Growth and the Obama Effect

Internet networks, like today's roads, are seeing an unprecedented increase in traffic growth. Keeping up with (and, in JANET's case, ahead of) this traffic growth is essential but challenging, especially as it doesn't take long for new capacity to be used as soon as it is added.

In the December 2008 JANET News, JANET(UK)'s Head of Strategic Technologies, Jeremy Sharp, described the project that was underway to upgrade the JANET backbone to use circuits capable of carrying 40Gbit/s. This has now been completed; after a period of stability testing JANET's traffic is using the new circuits and the old 10Gbit/s circuits have been retired.

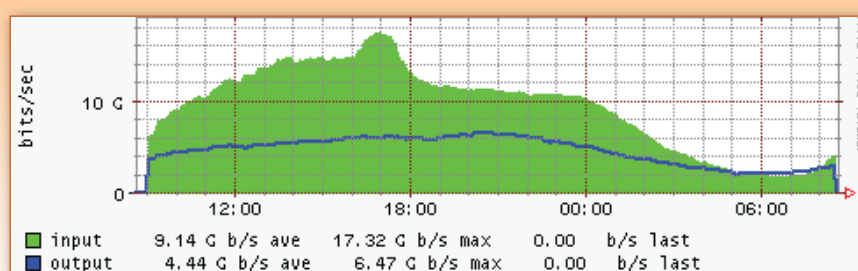
The graph, from the week beginning Monday 19 January, illustrates the traffic on one of those links in the week of President Obama's inauguration. The orange area shows

the traffic from Telehouse to the London backbone Point of Presence, and the grey line is the traffic in the opposite direction. During the working week it was regularly approaching 14Gbit/s. The figures are 30-minute averages, so shorter term peaks are higher than this. This is one of four 40Gbit/s circuits that carry the traffic between London Docklands and the rest of the backbone.

During the inauguration, the traffic on the same link surpassed 17Gbit/s.

Bringing this new 40Gbit/s technology into service will allow us to scale the current JANET backbone to cope comfortably with the increased traffic demands it is likely to see in its lifetime, and beyond this we are already starting to prepare for the next leap in circuit bandwidth to 100Gbit/s.

JANET Network Operations Centre
London



Portable Wireless LAN Trial Programme Launched

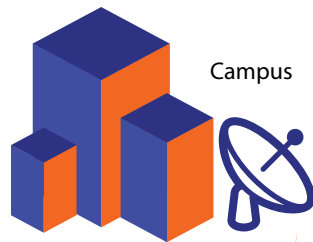
Just before the end of 2008, JANET(UK) issued a Call for Participation in the area of temporary, portable WLAN infrastructure and associated backhaul technologies. This was aimed primarily at supporting study in the field by making JANET-based resources accessible at the point they are needed. For example, an ecologist surveying a riverbed might consult an identification key held on a campus database in real time, or a geology student consult with study team members back in the lab over sample selection.

Conventional wireless technologies are already flexible enough to answer this need and provide sufficient bandwidth to support some measure of voice and visual collaboration between field site and base, offering a new range of teaching strategies in these practical disciplines.

However, realising these technologies in rugged, weatherproof, lightweight housings powered off-grid by battery or self-generated sources and deployable by non-specialist staff is a significant challenge. Solving this problem may go some way towards making these activities more accessible, as telepresence techniques over a temporary network link can facilitate participation where rugged terrain discourages physical presence at the site. It may also find some application in event support and disaster recovery.

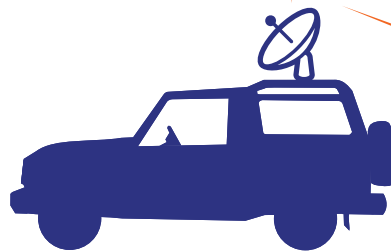
The response to this Call has been surprising in both volume and quality. It is evident that several sections of the JANET community are facing this problem individually. As a result, the initial trial scope has been extended to increase the breadth of coverage beyond the single site originally envisaged. Subject to contract, some five organisations will now be involved. The resultant case studies on both the

'The response to this Call has been surprising in both volume and quality. It is evident that several sections of the JANET community are facing this problem individually.'



Campus

Wide-area wireless link
(multiplex, 3G, Satellite, WiMAX, etc)



Vehicle/Base Camp

WLAN coverage at
field study site



Line of sight repeater stations
link across rugged terrain



technologies involved and their pedagogic impact will hopefully inform the community as a whole and increase the uptake of network access at the extreme edge.

We would like to thank all those who spent part of their lead-up to Christmas working on excellent submissions against this Call. It was the quality in depth of the response, not just of the successful bids, that convinced us to expand our coverage of this area. The prospects for this approach will be discussed further at the NGN Workshop in Prague,

23rd February. Progress of the JANET trial will be documented at <http://www.ja.net/development/portablewlan.html>.

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Call for Participation – Carrier Ethernet Project

JANET(UK) has issued an invitation to members of the JANET community to take part in a project to explore the features, functionality and maturity of two major strands of carrier Ethernet technology.

Capitalising on the potential of the current JANET infrastructure, JANET(UK) established an Optical Development Programme to investigate mechanisms to improve the management and delivery of network capacity wherever it is needed, and to examine developments in optical networking technologies and network architectures to inform the approach to future JANET network services. As part of this programme it was recognised that the emerging Carrier Ethernet technologies should also be considered as there is great potential for them to play a key role in how JANET is built in the future (see the article by Victor Olifer in the last edition of JANET News).

JANET(UK) development staff have recently completed some investigatory work and practical laboratory trialling of Carrier Ethernet technology. As an extension of this work JANET(UK) has issued its invitation. The two major strands of carrier Ethernet technology to be explored are:

- Ethernet over MPLS (EoMPLS) from the IETF
- Provider Backbone Bridges(PBB)/ Provider Backbone Bridges Traffic Engineering (PBB-TE) from the IEEE.

The project will consist of a number of funded practical and theoretical activities. To help facilitate the practical activities, a JANET-wide test bed will be deployed. The project term is intended to be approximately two years starting from June 2009.

Members of the JANET community who wish to participate in the Carrier Ethernet project should read the 'Call for Participation' document and respond before 8th April 2009.

For further information, and to participate in the project, please visit the project web page:<http://www.ja.net/development/optical-networking/carrierethernetproject.html>

For any further queries, please contact: Don Bishop, Project Manager: don.bishop@ja.net or Victor Olifer, Technical Specialist: victor.olifer@ja.net

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N3 JANET Gateway to be Upgraded

JANET(UK) and NHS Connecting for Health are finalising the business case for a jointly funded full N3 JANET Gateway service to follow on from the current early adopter.

The service will take all network traffic between N3, the core network for the NHS in England and Scotland, and JANET. It will be resilient with an active and standby link incorporating geographical separation by using POPs in London and Manchester. The existing early adopter N3 JANET Gateway will continue until the new service takes over, which should be in the autumn of this year.

'In the meantime we are pleased to welcome the University of Salford as the seventh early adopter for the existing Gateway.'

In the meantime we are pleased to welcome the University of Salford as the seventh early adopter for the existing Gateway. The university's involvement is to improve access to its web-based resources when on clinical placement in the NHS. The North Tees and Hartlepool NHS Foundation Trust have also joined South Tees Hospitals NHS Trust as a user of the JANET Videoconferencing Service over the N3 JANET Gateway.

Next NHS HE Forum in April

The next NHS-HE Forum is booked for for 22nd April 2009 at the Mayflower Conference

Centre, London. The new Chair of the Forum will lead a discussion to distil desired future directions for the Forum and there will be keynote sessions on the NHS Research Capability Programme, and to be confirmed, the work with the National Library for Health on federated access management and clinical applications for High Power Computer Resources. Please see www.nhs-he.org.uk/forum.html for more details.

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The Power of JANET

JANET has issued a new publication for local authorities in England advising them on the benefits of connecting to JANET.

Over 100 local authorities are provided with JANET connections and JANET is able to offer them very cost effective, highly reliable, high bandwidth access to the National Education Network and to the Internet. JANET can be used by Unitary authorities and other public sector bodies, where the use is to the benefit of the local community or to the public in general.

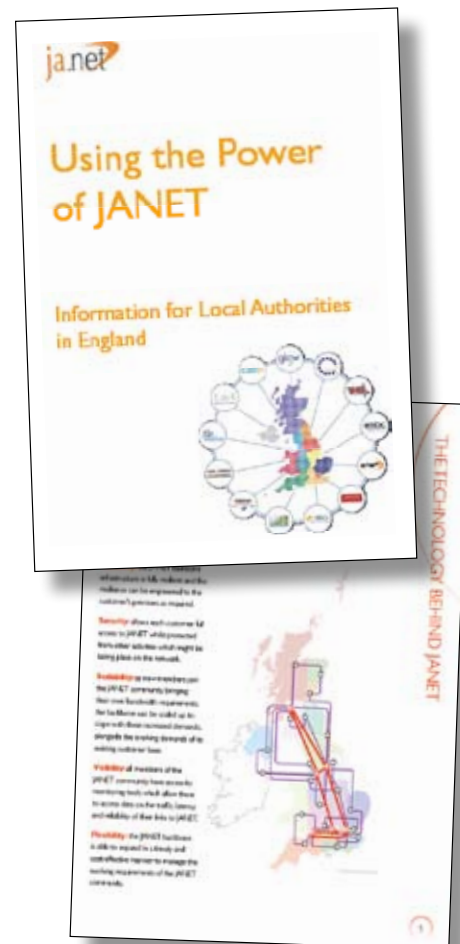
Using the Power of JANET: Information for Local Authorities in England provides useful information explaining what JANET is; the key benefits of using JANET; JANET and the National Education Network; a series of answers to frequently asked questions; and six case studies contributed by local authorities and organisations that have JANET connections. These are the Kent Public Service

Network; London Grid for Learning; Barnsley Children, Young People and Family Services; Isle of Wight Community & Family Learning Service; Warwickshire CYPF Directorate; and Windsor & Maidenhead Learning and Care Directorate.

The publication received a lot of interest at January's BETT show and at the GovIT event in February, at which JANET(UK) CEO Tim Marshall led workshops on the theme of working together to provide better and more cost-effective services (see page 13) and where JANET had a stand.

Copies of the document can be obtained from the JANET Service Desk.

Robert Prabucki
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“JANET connectivity is now being used by public sector agencies and has reduced costs considerably”

Peter Banbury
ICT Projects Manager
Kent



JANET Training at NETWORKSHOP® 37

37
CAMBRIDGE

Building on our activities from last year, JANET Training will be focusing on providing three main services for delegates attending this year's Networkshop conference. These activities will start on Monday 30 March when we will be running two of our new courses.

The first of these courses is 'Implementing a Shibboleth 2 Service Provider', which covers the installation and configuration of a Service Provider within the federation framework. The second course available is Andrew Cormack's new course 'Computers, Privacy and the Law', which provides an introduction to the privacy and legal issues relevant to support staff with elevated access rights. Delegates wishing to attend these courses should make sure they book their place now and, if required, reserve accommodation via the Networkshop booking service as places are limited. These courses are open to all staff working within a JANET-connected organisation and not limited to those registered for Networkshop.

Our second area of focus will be Networkshop Online which, like last year, will be run on our online learning facility EdLab. This site will provide a range of support facilities to help delegates make the most of

their attendance at the conference. This will include access to the following information, tools and resources:

- **Programme** – Prior to the conference, delegates will get access to a number of interviews with session chairs so they can start making decisions about their session choices. During the conference, delegates will have access to audio downloads of parallel talks so they can catch up on sessions they may have missed. Following the conference, access to video files of the presentations will also be available.

- **News and Information** – During the conference, we will be working with the organisers to keep delegates up to date with relevant news and information. This will include any room changes, cancellation and details of social events. This will be supported by a twitter feed. We will be using the conference tag #nws09 and will be showing a live feed of all tagged posts during the conference. We will also provide a range of interactive maps and guides to help delegates navigate the campuses and exhibition.

- **Your NWS** – Linked to all these areas will be discussion facilities so that delegates can continue asking questions, discussing the points raised and generally publishing their thoughts on the conference and the topics covered. We will also have facilities

to upload and text delegates' photos for publishing on the site.

To gain access to Networkshop Online, delegates will need to register on EdLab and follow the link on the front page to apply for access. We can then check their Networkshop registration and open up access to Networkshop Online. Following the conference this area will be made publicly available and therefore available to other EdLab users.

Our third activity will be the provision of the JANET Lounge, a room within the exhibition providing a quiet space for delegates. This room will have comfortable seating, access to power and access to Networkshop Online for delegates without their own laptops.

We hope all these activities will help to enhance delegates' overall experience of this already successful conference and look forward to their contributions.

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For more details on EdLab and the courses provided by JANET Training please see www.ja.net/training



JANET at Government IT 09



Robert Prabucki and Infrastructure Co-ordinator Kevin Sharp on the JANET(UK) stand at GovIT

In spite of the weather and travel difficulties some people experienced, the Government IT Conference 2009 was held in February at the QEII Conference Centre in London.

JANET both had a stand and ran two workshops, led by CEO Tim Marshall. Early in his opening Keynote Address 'Transformational Government: Where Are We Now?', Kevin McLean, Director of Strategy and Policy, Transformational Government, Cabinet Office said that 'JANET was a fantastic example of a successful shared service' and noted that over 100 authorities are now connected to the network.

The two workshops led by Tim Marshall included presentations from Tim Kidd (Head of Operations, JANET(UK)), Nick Atkins (IT

Director, University of the Arts, London) and Heather Pettitt (South East Grid for Learning). The presentations focused on the opportunities and rationale

for shared services, an overview of the JANET infrastructure, the user experience, and a

'The event was a very successful opportunity to raise the awareness of JANET within the public sector'.

description of the JANET-connected Kent Public Service Network. Nick made the point that the inherent reliability of JANET means it is a service he doesn't have to be concerned about, freeing him to concentrate on development activities.

The delegates at the conference were from all sectors of the public sector, many of whom visited the stand and wanted to know more about JANET and what it can offer. The event was a very successful opportunity to highlight the contributions that JANET can make to the delivery of public services.

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Enlightenment Dawns at the JANET Optical Briefing

Over 50 delegates from the JANET community attended the Optical Event held on 28 January 2009 at the ICO Conference Centre in London. The aim of the event was to provide an overview of the work being carried out under the JANET Optical Development Programme and to provide a glimpse into the future of optical networking technologies.

Jeremy Sharp, Head of Strategic Technologies at JANET(UK), explained how the Optical

Development Programme was preparing for JANET's future whilst ensuring that the current infrastructure remained fit for purpose.

Rob Evans, Senior Engineer at the JANET(UK) Network Operations Centre, started the day with an interesting talk on 'Upgrading to STM-256', or upgrading a substantial part of the core to 40Gbits/s capability. He covered why the speed increase was necessary; the original trial in 2007; the two phases of implementation during 2008; and the problems

encountered and how they were resolved. Finally he touched on 'Where next?', introducing 100Gbit/s and Carrier Ethernet possibilities.

Next, Dave Tinkler, Senior Network Engineer from JANET(UK), talked about JANET Lightpath's move to EoMPLS (Ethernet over multiple protocol label switching). He went

through a definition of the Lightpath service, the present infrastructure, the options available and the basis of the decision to go with EoMPLS. He then confirmed

that installation and configuration was now complete and that the switchover was due to take place in March 2009.

The final session of the morning was from Victor Olifer, Technical Specialist in JANET(UK)'s Strategic Technologies division, who covered Carrier Ethernet and optical transport integration. Victor started by explaining the complexities of layer integration and the pros and cons

of the options. He went on to look at the definitions and differences between Carrier Ethernet Transport and EoMPLS. Although the latter had been selected for the Lightpath upgrade, the decision was partly a timing issue and more investigation is needed to identify the strengths and weaknesses of each solution. To this end, he stated that a call was announced on 22 January, inviting participation in a Carrier Ethernet Project to run over two years. Details of this are on the JANET(UK) web site at: <http://www.ja.net/development/optical-networking/carrierethernetproject.html>

After lunch Tim Robinson, Operations and Technical Director at Net North West, presented a case study of the issues at an

RNO when upgrading their network. There were some interesting slides showing the differences between point to point distances and fibre route distances which can make a significant impact. Not for the first time during the day, some common themes emerged relating to VLANs, EoMPLS and Carrier Ethernet Transport.

GEO UK's Marcus Dorling and Jon Romano, talked about how to benefit from a dedicated fibre network. Discussed were alternative methods of routing (shortest distance is not always cheaper), treating unlit (dark) fibre as an asset to future proof increasing demand on the network, and attributes to be considered.

David Salmon, JANET(UK) Research Support Unit Manager, took us on a swift run through JANET(UK)'s investigations into dynamic lightpath provisioning. Topics included getting capacity to where it is needed; control and management – network management systems still appear proprietary and expensive; looking ahead to EoMPLS and the Carrier Ethernet Trial; and beyond the current JANET infrastructure.

The day was completed by Colin Wallace of Ciena, talking about Optical Technology which centres on intelligent networks and the migration to intelligent networks with 100Gbit/s. His view is that the need for capacity is doubling every 12 to 18 months. 10Gbit/s will not be adequate beyond 2010. 40Gbit/s will handle growing traffic in the short term but may just be a stepping stone to 100Gbit/s by 2011.

Further information on the conference, including copies of the slides used in each talk, is available from http://www.ja.net/services/events/2009/optical_event/programme.html.

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Forthcoming Event: JANET CSIRT Briefing 22 October 2009

An important series of up-to-the-minute talks on the threats that networks face, and some of the technologies and techniques that can be used to protect them.

Book the date in your diary now. Further details to follow in the summer.



Forthcoming Events

JANET CSIRT Briefing

22 October 2009
ICO Conference Centre
22 Berners Street
London
W1T 3DD

Workshop 37

31 March - 2 April 2009
University of Cambridge

Book your place now!

The main conference and exhibition venue will be the West Road Concert Hall located on the Sidgwick Site. The parallel sessions will be held in the Faculty of Law Building which is only a very short walk from the West Road venue.

Forthcoming Courses



MARCH

Computers, Privacy and the Law	March 3rd 2009 - Bristol
Introduction to the UK federation	March 10th 2009 - Birmingham
Computers, Privacy and the Law	March 30th 2009 - Cambridge
Implementing a Shibboleth 2 Service Provider	March 30th 2009 - Cambridge

APRIL

Basic Router Configuration	April 17th 2009 - Cambridge
Firewalls: Planning and Implementation	April 21st 2009 - Belfast
Wireless LAN Fundamentals	April 22nd 2009 - Belfast

MAY

Introduction to Videoconferencing	May 13th 2009 - Edinburgh
Technical Support of Videoconferencing	May 14th 2009 - Edinburgh
Introduction to the UK federation	May 26th 2009 - London
Implementing a Shibboleth 2 Service Provider	May 27th 2009 - London
Implementing a Shibboleth 2 Service Provider	May 28th 2009 - London



JANET Training will be running the following courses on Monday 30th March 2009 in Cambridge (as part of the pre-Workshop events)

Implementing a Shibboleth 2 Service Provider

Computers, Privacy and the Law

Dates and online booking for all courses are available on our website.

A mailing list is available for the distribution of information regarding JANET training courses. Discussion of training requirements relating to the JANET network, suggestions for new courses, locations or course frequencies are also welcomed. To join this list, access the JISCmail site at: <http://www.jiscmail.ac.uk/lists/janet-training.html>

Events Calendar

<http://www.ja.net/services/events/calendar-2009.html>

Reports

Quarterly Report to the Community (November 2008-January 2009)

<http://www.ja.net/services/publications/reports/quarterly-report/qr-winter08>

Newsletters

JANET News 6

<http://www.ja.net/documents/publications/news/news-6.pdf>

General Information

Videoconferencing 033 (01/09)

<http://www.ja.net/documents/publications/videoconferencing.pdf>

Using the Power of JANET: Information for Local Authorities in England 030 (01/09)

<http://www.ja.net/documents/publications/localauthorities.pdf>

Technical Documentation

Streaming Live Video on JANET 031 (01/09)

<http://www.ja.net/documents/publications/technical-guides/streaming-live-video.pdf>

Secure Virtual Private Networks 023 (02/09)

<http://www.ja.net/documents/publications/technical-guides/tg-vpn.pdf>

JANET Roaming Service Technical Specification v1.1

<http://www.ja.net/documents/services/janet-roaming/techspec.pdf>



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Availability

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