

UKERNA Quarterly Report to the JANET Community January 2003 to March 2003

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This report is produced and published by the United Kingdom Education and Research Networking Association (UKERNA) for use within the JANET Community. We welcome comments on all aspects of this document and on any other UKERNA publications. Please direct feedback or any complaints about the content to JANET Customer Service (JCS), at the contact given in section 3.2.1, or e-mail: service@janet.ac.uk

1 Introduction

This report broadly follows the sequence of the Service Level Agreement (SLA) between UKERNA and the funding bodies represented on the Joint Information Systems Committee (JISC), for the financial year 2002/2003.

The numbering follows the numbering of the SLA, and apparent omissions reflect the fact that there is nothing to report at present.

This report covers the period January to March 2003 (Spring).

Electronic copies of UKERNA's Quarterly Reports to the JANET Community can be found at: <http://www.ja.net/documents/quarterly.html>

2 Operational Services

2.1 Basic Internet Protocol (IP) Transmission Service

2.1.1 Access to Backbone

This reporting period has seen a total of 24 new or enhanced customer connections completed and brought into service:

- Arden College;
- Bishop Grosseteste College;
- Bracknell and Wokingham College;
- City College Manchester;
- City of Sunderland College;
- Deeside College;
- Halton College;
- Kingston College;
- Lincoln College;
- Medical Research Council - Human Genome Mapping Project Resource Centre (HGMP – RC);
- Medical Research Council HQ;
- Merton College;
- New College, Nottingham;
- North Hertfordshire College;
- Pennine Camphill Community;
- People's College, Nottingham;
- Richmond upon Thames College;
- South East Essex College of Arts and Technology;
- South Nottingham College;
- South Thames College;
- Treloar College;
- University of Sunderland;
- University of Teesside;
- Welsh College of Horticulture.

For information regarding current upgrades or connections, please contact JCS at: connections@janet.ac.uk

A list of all primary sites connected to JANET may be found at:
<http://www.ja.net/janet-sites/>

2.1.1.1 Further Education (FE)

The initial programme of provision of JANET connections to FE colleges throughout the UK is complete.

England

Mergers within the sector have reduced the total number of colleges, but many merged colleges have elected to retain JANET connections to their second sites. A pilot project to connect six specialist colleges, funded by the Learning and Skills Council (LSC), is in progress, with five connections currently in service.

Northern Ireland (NI)

College access circuits and the connection to the SuperJANET backbone have been extremely reliable. Most college access circuits continue to be used to capacity during peak hours.

Scotland

All Regional Network reprocurments are complete and Scottish colleges are now benefiting from enhanced bandwidth to JANET.

Wales

All college connections continue to perform well. Implementation of the North Wales Metropolitan Area Network (MAN) is progressing, and delivery of higher bandwidth connections to colleges in North Wales is underway.

2.1.2 Core Network

The core network has run smoothly over the past quarter. The access link to NI was upgraded to 2.5Gbit/s in March. A new Dublin Regional Point of Presence (R-PoP) was established in March, which connects to the Queen's University of Belfast (QUB) R-PoP in Belfast and the Telescity R-PoP in London via a 155Mbit/s link. This arrangement is in co-operation with Ireland's National Education and Research Network (HEAnet), which provides resilience for NI. The NI-HEAnet link has been configured so that it now serves as a fallback route for the NI JANET sites in the event of the default link via Glasgow failing.

Two major service problems were recorded during this reporting period. The access link from the Midlands Metropolitan Area Network (MidMAN) to the SuperJANET core suffered an intermittent connectivity problem for over seven hours on 5 February 2003. The problem was caused by a faulty interface card on telecom equipment. A long service outage also occurred on the links to the Oxford Backbone Access Router (BAR) at the end of February. This was also caused by faulty control cards on telecom equipment.

Major outages are reported on the JANET web server at:
<http://www.ja.net/cgi-bin/index.pl/outages/>

2.1.3 IP Multicast

A request for information was issued to the Regional Network Operators (RNOs) to assess the current extent of deployment of multicast transport across JANET. This was done through an online questionnaire and to date most of the RNOs have responded.

The majority of the RNOs have deployed or are in the process of deploying multicast.

A multicast beacon server for JANET is now operating. This has been advertised to the AccessGRID community only. It will be formally announced to the wider JANET community in the near future. In the longer term UKERNA will work towards establishing a dedicated beacon system for AccessGRID within the support framework for e-Science videoconferencing that has been approved by the JISC Committee for the Support of Research (JCSR). UKERNA has drafted an addressing policy and beacon architecture for multicast on JANET and has defined a model for how beacons might be used to give visibility of the status of the multicast service and assist with end-to-end testing of multicast transport.

2.2 External Network Access Provision and Transmission

2.2.1 Access within Europe

JANET access to European National Research and Education Networks (NRENs) is via a 2.5Gbit/s connection to the Gigabit European Academic Network (GÉANT) from Telescity. Traffic over the link peaks at around 400Mbit/s.

Further information about GÉANT can be found at:
<http://www.dante.net/geant.html>

2.2.2 Access to the North American Internet

JANET access to the global Internet is provided by Sprint[®], Level3 Communications[™] and MCI from Telehouse[®], Telescity and St. Pancras in London. This provides a high resilience to the service. Aggregated peak traffic reached 2.2Gbit/s over these connections.

The topology of current external connectivity can be found at the following:
<http://www.ja.net/topology/external.html>

2.2.3 Access to Abilene and ESnet

JANET private peerings with US research networks Abilene and ESnet are provided via GÉANT. Customers experienced some long round trip times during this reporting period. This was due to GÉANT relocating their New York Point of Presence (PoP) and re-routing JANET traffic.

2.2.4 Access to the UK's Internet Exchanges

The London InterNet eXchange (LINX™) is the facility that allows the transfer of traffic between Internet Service Providers (ISPs) within the UK. JANET access to the LINX™ is achieved via two GigaEthernet connections from Telehouse® and Teletcity. During the reporting period, traffic peaked at around 800Mbit/s and the service was reliable. A private peering with BTnet was upgraded to 1Gbit/s. Total peering traffic is currently about 500Mbit/s.

JANET has started peering with Internet Service Providers (ISPs) via the Manchester Network Access Point (MaNAP).

2.2.5 Access to the Chinese Education and Research Network (CERNET)

The peering connection between JANET and CERNET was well used during this reporting period. The link was saturated throughout the reporting period. More information on CERNET can be found at:
<http://www.edu.cn/HomePage/english/>

2.3 Fault Handling

2.3.1 Fault Reporting

The existing fault reporting mechanism remains unchanged. UKERNA's Reporting Problems web page can be found at:

http://www.ja.net/reporting_prob.html

Announcements relating to major service outages can be found at:

<http://www.ja.net/cgi-bin/index.pl/outages/>

The JANET Operations Desk is the main point of contact for fault reporting and can be contacted as follows:

Telephone:	020 7692 1111
Facsimile:	020 7692 1234
E-mail:	operations@ja.net

2.3.2 Network Status Information

The network monitoring service, JANET Netsight, has been developed by UKERNA to provide an easy to understand view of the status and performance of JANET. The service comprises a number of UNIX® based machines deployed around the edge of the backbone that will in the long term provide an overview of all the JANET Regional Networks.

The deployment of the Netsight systems has continued and there are now 21 in place on the network. The RNOs are now managing all the deployed Netsight systems. The majority of the systems have now had all their respective regional connections added. Individual connection details such as traffic, reliability and latency figures are available to those connections via a username and password on each system. Work has commenced on making the Netsight facility available to the Regional Broadband Consortia (RBC).

The development of the Netsight system is very much a dynamic process with enhancements being incorporated continually. The Network Resource Group at UKERNA, which is responsible for the development of the monitoring system, maintains an internal and customer based 'wish list' for desired improvements and enhancements to Netsight. The future will see Netsight being developed further to

provide a monitoring service to other developing services within JANET. More details are available at: <http://www.ja.net/services/netsight/>

2.4 Managed Router Service (MRS)

There has been no increase in the number of sites requesting the MRS during the quarter. There are currently 16 sites connected to the MRS. UKERNA continues to work closely with Synstar on completing the installation to sites that have already requested the service. Further information about this service is available at:

http://www.ja.net/services/managed_router/

2.5 Naming and Addressing

2.5.1 Naming Domain Administration

UKERNA administers the domain name approval service for both the ac.uk and gov.uk second level domains, along with any modifications required to register entries in the Domain Name Server (DNS) for these domains. The procedure for gaining names in both domains is detailed at:

http://www.ja.net/documents/naming/names_ac_gov.html

The modifications procedure for domain names under ac.uk and gov.uk already registered in the DNS is available at:

http://www.ja.net/documents/naming/naming_mods.html

The rules on eligibility for registration under ac.uk are available at:

<http://www.ja.net/documents/naming/ac.uk-naming-rules.html>

During the reporting period 577 requests for new domain name registrations and modifications to existing entries were received. The rate of applications for new domain names averaged 123 per month, with an average of 62 modifications for each month.

The charge for a new name request is £94 including V.A.T. (including the first two year's maintenance charge). The biennial maintenance charge of £47 including V.A.T. for all modification requests is not applicable to organisations while they remain connected to JANET. Further information on domain name charging can be found at:

http://www.ja.net/documents/naming/ac.uk-naming-procedure.html#payments_charges/

2.5.2 Domain Name Service (DNS)

The JANET DNS service continues to run reliably.

2.5.3 Primary Name Servers Service

The model for delivery of a Primary DNS hosting service to certain JANET customer organisations has been defined. A contract has been agreed with The University of London Computer Centre (ULCC) for them to manage the operating system and name server software, to maintain the security for the platforms, and to update zone data. UKERNA will be responsible for routing interaction with customers such as requests for use of the service and related enquires. The order for name server hardware has been placed, and currently the customer-supporting document is in preparation.

2.5.4 Secondary Name Servers Service

The Secondary Name Servers Service is currently available, without charge, to any customer with a Primary Connection to JANET. Under this service UKERNA will arrange for a secondary name server to be run on the customer's behalf at a remote site on JANET. By the end of this reporting period the number of organisations using the service had increased to 447. Further information about the service can be found at:

http://www.ja.net/services/secondary_nameserver.html

2.5.5 Domain Name Service whois service

There have been no known failures to the whois service during this reporting period.

The WHOIS server database of existing names in both the ac.uk and gov.uk domains is in place, and is currently updated approximately once a month. An automated updating system of the WHOIS server database is progressing and it is anticipated that this will be in place and operational within the next few months. The current server can be queried using one of the following UNIX commands:

```
whois -h whois.ja.net domainname.ac.uk  
whois -h whois.ja.net domainname.gov.uk
```

2.6 Supporting Infrastructure Services

2.6.1 Network Time Service

The JANET Network Time Service delivers a stable time reference to customer organisations using the Network Time Protocol (NTP) specified in RFC 1305. It consists of four 'stratum-1' servers distributed across the network, located at London, Bristol, Manchester and Edinburgh. This mesh of communicating systems gets 'true time' from external references such as MSF time signals broadcast by the UK Time and Frequency Standard Station, and the Global Positioning System (GPS) satellite navigation system. The result is that clock settings across the whole mesh are very closely synchronised and a single rogue system with the wrong time will have very little effect. A synchronised time service is important for some services, such as distributed file systems.

Fourteen more sites registered to use the JANET NTP service during the reporting period. At the end of the reporting period the clock in London appeared to have developed a fault, which is being investigated. Overall, it is a stable and well-used service. Details of the service are available at: <http://www.ja.net/ntp/>

2.6.2 Co-ordination of Message Handling Services

The JANET Mailer Shield pilot service will run until April 2003. It will then be reviewed and a decision taken about what service, if any, to offer. The supporting documentation is now available at: http://www.ja.net/mail/mailer_shield/

During this reporting period, one more organisation registered to take part in the pilot, which makes a total of eight participant sites to date. The service provides a shield to site mailers, that are vulnerable to Spam (Unsolicited Bulk E-mail or UBE) hijacks and attacks. UKERNA is currently looking at the possibility of developing a Spam filter to be incorporated into the pilot service.

2.7 Usenet News Distribution

2.7.1 Usenet News Backbone

The JANET Usenet News Service enables JANET customers to receive Usenet News feeds from a backbone of JANET News servers. The service is available free to all organisations with a Primary Connection to JANET, and can provide a full feed of all the newsgroups available worldwide, except for geographically limited hierarchies and groups excluded because they have a record of containing illegal material. A customer organisation may choose to be provided with a News Feed that does not include all the newsgroups available.

There are currently two ways of receiving Usenet News over JANET and the JANET Usenet News Service documentation reflects this. The documentation is linked from: <http://www.ja.net/usenet/>

2.7.2 JANET News Feed Service

The News Feed Service continues to function well. In this reporting period, one new site joined the Service and one moved to the News Reader Service. There are a total of 93 sites connected to the Service. More information is available at: <http://www.ja.net/usenet/feed.html>

2.7.3 JANET News Reader Service

Three sites have joined the News Reader Service during the reporting period. There are now 38 sites connected to the service. The service is documented at:
<http://www.ja.net/usenet/reader/reader.html>

2.8 Videoconferencing Services

2.8.1 JANET Videoconferencing Service (JVCS)

The project to procure the Videoconferencing Management Centre (VCMC) has been completed and a contract has been signed with the University of Edinburgh to continue its operation of the VCMC. The new service starts on 1 April 2003 and will initially operate for three years. The VCMC will provide support for videoconferencing over IP and Integrated Services Digital Network (ISDN), as well as gatewaying between videoconferencing technologies.

The operation of the JANET Videoconferencing Service over IP (JVCS-IP) began on 17 February 2003. Multipoint Control Unit (MCU) capacity is provided for up to 48 sites to participate in IP videoconferences at bandwidths of up to 2Mbit/s (full transcoding between 384kbit/s, 768kbit/s and 2Mbit/s is provided). Gateways capable of 24 IP and ISDN mixed sites have been provided along with a central gatekeeper hierarchy.

There are 394 videoconferencing venues registered to use JVCS over ISDN (JVCS-ISDN) and a further 144 venues registered to use JVCS-IP. During the reporting period 1288 conferences took place that used ISDN over 4301 hours. In addition 815 conferences took place using IP and the IP/ISDN gateway over 1886 hours.

2.8.1.1 JANET Videoconferencing Booking Service

A contract has been signed with the University of Edinburgh for the maintenance and development of the JVCS Booking Service. The work to make functional enhancements and improvements to the user interface has begun. It is envisaged that the enhanced Booking Service will be launched in the final quarter of 2003.

2.8.2 Video Technology Advisory Service (VTAS)

This is a UKERNA service that provides unbiased technical advice to JANET-connected FE, HE and Research Organisations. VTAS has maintained its schedule of product evaluations, most recently examining the Polycom® iPower™ 9800. This evaluation report, together with the testing schedule and previous evaluation reports, can be found at:
<http://www.video.ja.net/evaluation/>

One of the aims of the advisory service is to develop documentation of interest to the JANET community. Four new Factsheets have just been released:

An Overview of H.323 Videoconferencing PB/INFO/035
http://www.ja.net/documents/factsheets/035_H.323.pdf

H.323 Terminals for Videoconferencing PB/INFO/036
http://www.ja.net/documents/factsheets/036_Terminals.pdf

Planning Rooms for Videoconferencing PB/INFO/037
http://www.ja.net/documents/factsheets/037_Planning_Rooms.pdf

H.323 Videoconferencing Components PB/INFO/038
http://www.ja.net/documents/factsheets/038_IP_Components.pdf

Work is continuing to facilitate the integration of the VTAS and JCS helpdesk systems.

Further details about the service can be found on the VTAS web pages at:
<http://www.video.ja.net/>

A Factsheet outlining the features of the service is available from JCS or online at:
<http://www.ja.net/documents/factsheets/vtas.pdf>

2.9 Administrative Services

2.9.1 Connection Administration

UKERNA is responsible for administering the procedure for the approval and commissioning of new and upgraded connections to JANET. This involves liaising with customers to report progress on their new or upgraded connections. All sites connected to JANET must fit the JANET Connection Policy which can be found at:

http://www.ja.net/documents/connection_policy.pdf

Requests for new or enhanced JANET connections should be made via JCS.

A list of organisations connecting to JANET during the reporting period is provided in section 2.1.1. For information regarding current upgrades or connections, contact JCS at:
connections@janet.ac.uk

2.9.2 Peer Networking Agreement Administration

Peering agreements with the following companies were reached and implemented during the reporting period:

LINX™ Peering (London)

- Arsys Internet
- UKSolutions

MaNAP Peering (Manchester)

- 1A Networks Ltd (also peering at LINX™)
- C2i Business Internet™ Ltd
- Designer Servers™ Ltd
- Keycom™ plc
- Legend Internet (also peering at LINX™)
- REDNET™ Ltd (also peering at LINX™)
- Your Communications
- Zen Internet
- Zetnet Services™ Ltd

2.9.3 Licence Administration

Over the past three months JCS has issued six new Sponsored Connection licences and three new Proxy Connection licences. Further information about Sponsored and Proxy Connections can be found at:

http://www.ja.net/connect/types_connect.html

2.10 Operational Support Services

2.10.1 Management of Maintenance Activities

There were a total of 12 at-risk sessions for the reporting period during which planned work and maintenance activities took place.

Major activities that took place include:

- Internal Operating System (IOS) upgrades to various routers;
- power cycling of core routers at Bristol and Glasgow to clear intermittent hardware faults;

- routers at Manchester, Glasgow and Belfast upgraded with new line cards to accommodate SuperJANET upgrades (2.5Gbit/s link from Manchester to Network North West and 2.5Gbit/s link from Glasgow to Belfast);
- router installed in Dublin to facilitate resilience for NI.

3 Information and Support Services

3.1 Network Information Service

The JANET/UKERNA web server was successfully upgraded this quarter and continued to perform well. A new style that addresses the findings of the Bunnyfoot accessibility audit has now been approved and is being implemented.

Work on the web server mirror is on schedule and it will be deployed at a remote location in the near future. This will provide increased resilience to the service.

Any comments or suggestions on the web server structure and page appearance will be gratefully received and should be directed in the first instance to JCS at:
service@janet.ac.uk

3.2 JANET Customer Service (JCS)

This provides the primary point of contact for all enquiries concerning JANET services and requests for information. Contact information is provided below.

The number of enquiries received and logged by JCS in this reporting period was 1757. As in previous quarters a large proportion of these queries related to the Domain Name Service, Sponsored and Proxy Connections, general enquiries and JANET access/connection.

A total of eight complaints were received in this reporting period. Of these, two are currently awaiting final resolution.

3.2.1 Contact Information

The Service is staffed from 08.00 to 18.00 Monday to Friday, with voice-mail available for calls outside these hours and if staff are temporarily unable to answer a call.

During the next reporting period there are two UK-wide public holidays, May Day (5 May) and the Spring Bank Holiday (26 May) when JCS will not be staffed.

Enquiries may be made by e-mail, telephone, fax, post, or in person as follows:

E-mail: service@janet.ac.uk

Tel: 01235 822212

Fax: 01235 822397

Post: JANET Customer Service, UKERNA, Atlas Centre, Chilton, Didcot, Oxon, OX11 0QS.

3.3 Documentation

Unless otherwise stated, paper copies of these documents can be obtained from JCS, but please note that some documents are now produced primarily for publication on the web and are better read online. If an electronic version of a document is available, the URL is given. Electronically available documentation is in HyperText Markup Language (HTML), PostScript or Portable Document Format (PDF) format.

UKERNA welcomes feedback from the community on the usefulness of all documentation produced and encourages suggestions as to which areas require additional documentation.

Comments should be sent by e-mail to:
service@janet.ac.uk

During the reporting period, UKERNA produced the following documents.

Factsheets

Computers and the Law (update)

PB/INFO/05 (03/01)

[http://www.ja.net/documents/factsheets/Computers_and_the_Law\(0301\).pdf](http://www.ja.net/documents/factsheets/Computers_and_the_Law(0301).pdf)

H323 Terminals for Videoconferencing

PB/INFO/036 (03/03)

http://www.ja.net/documents/factsheets/036_Terminals.pdf

H.323 Videoconferencing Components

PB/INFO/038 (03/03)

http://www.ja.net/documents/factsheets/038_IP_Components.pdf

Internet Protocol Quality of Service (IP QoS)

PB/INFO/032 (03/03)

<http://www.ja.net/documents/factsheets/QoS1.pdf>

Internet Protocol version 6 (IPv6)

PB/INFO/031 (03/03)

<http://www.ja.net/documents/factsheets/IPv6.pdf>

JANET Netsight April 2003

PB/INFO/013 (03/04)

<http://www.ja.net/documents/factsheets/Netsight0304.pdf>

JANET Services

PB/INFO/029 (03/01)

http://www.ja.net/documents/factsheets/JANET_services.pdf

An Overview of H.323 Videoconferencing

PB/INFO/035 (03/03)

http://www.ja.net/documents/factsheets/035_H.323.pdf

Planning Rooms for Videoconferencing

PB/INFO/037 (03/03)

http://www.ja.net/documents/factsheets/037_Planning_Rooms.pdf

Threats to Passwords

PB/INFO/026 (03/01)

http://www.ja.net/documents/factsheets/Threats_to_Passwords.pdf

Two-Way Satellite Trial

PB/INFO/034 (03/03)

http://www.ja.net/documents/factsheets/Satellite_Trial.pdf

Using Passwords

PB/INFO/026 (03/01)

http://www.ja.net/documents/factsheets/Using_Passwords0301.pdf

Newsletters

UKERNA News 22 (March 2003)

http://www.ja.net/documents/UKERNA_News/index.html

Service Documentation

Bandwidth Management Advisory Service
PB/SERV/005 (03/02)

JANET Videoconferencing
PB/VIDEO/005 (03/04)

JANET Videoconferencing Service - IP (JVCS-IP)
<http://www.jvcs.video.ja.net/docs/jvcsip.shtml>

Reports

UKERNA Quarterly Report to the JANET Community
October 2002 - December 2002
<http://www.ja.net/documents/quarterly.html>

Other

JANET Marketing Booklet (A5)
PB/JANET/002 version 4

Proceedings of Networkshop 31 (2003)

3.4 Technical Updating for the UKERNA Community

3.4.1 Workshops and Conferences

BETT, 8 - 11 January 2003, Olympia, London

UKERNA had a stand for the four days of this major educational show. Staff from various departments within UKERNA attended the show and found it useful to meet staff from many organisations connected to JANET. The stand was conveniently located next to the Regional Broadband Consortia (RBC) stand with whom we are currently progressing the RBC interconnects.

Computer Security Incident Response Team (CSIRT) Training Course, 15 - 16 January 2003, Thistle Hotel, Bloomsbury, London

A two-day course for Incident Response Teams was presented in London in January. This used materials developed by European Incident Response Teams, including UKERNA, that are now maintained as part of the EC-funded Training of Network Security Incident Teams Staff (TRANSITS) project in which UKERNA and the Trans-European Research and Education Networking Association (TERENA) are partners. 20 delegates from a variety of JANET-connected organisations discussed the current best practice in incident response and how to apply it to their own situations.

JANET IPv6 Conference, 12 February 2003, The Conference Centre, Church House, London

Fifty nine people attended this one day conference. The aim of the event was to provide the UK education and research community with details of the JANET experimental IPv6 service, UKERNA's participation in the IPv6 project and future IPv6 work and deployment. Presentations from the conference can be found at:

http://www.ja.net/conferences/ipv6/feb_03/prog.html

Universities and Colleges Information Systems Association (UCISA) Management Conference and Exhibition, 12 - 14 March 2003, Harrogate International Centre

UKERNA had a stand at this annual event where recently published documentation was displayed.

Videoconferencing Technical Seminar, 27 March 2003, Pippard Lecture Theatre, Imperial College London

This was a joint production with the RBC Technical Group. About 60 representatives from the Schools Community attended this event in London. The programme and presentations can be viewed at:
http://www.ja.net/conferences/video_2003/prog.html

3.4.2 Study Groups

3.4.2.1 Video Technical Advisory Group (Video-TAG)

With the maturing of videoconferencing technology and the fact that good practice in this area is now common place, it is felt that Video-TAG has done its job and that it is now time to draw the group to a close.

It is equally clear that development work being undertaken in the areas of Voice over IP (VoIP) and the development of content delivery services is not being adequately represented in the JANET technical advisory groups. UKERNA are therefore considering launching a technical advisory group charged with covering developments in voice, video and content services.

The Video-TAG mailing list will be retained until a new group is established at which time UKERNA will transfer the membership of those who wish to join to the new group.

Further details on Video-TAG can be found at:

<http://www.ja.net/video/video-tag/>

3.4.3 Training Courses

The Training Section delivered seven courses over the quarter.

In London

JANET Essentials	10 February
Technical Overview	11 February
Router Configuration	12 February
Security	13 February

In Bristol

Technical Overview	18 March
Router Configuration	19 March
Security	20 March

Details of courses and a timetable can be found at:

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

3.5 Network User Groups

JANET User Groups represent the views and needs of all users of JANET, both to the bodies that fund JANET and to the providers of the network. The JANET User Groups include those representing geographical regions, those representing particular interest groups and the National User Group. User Group meetings are usually held two or three times a year. UKERNA also sends representatives to these meetings, as this is a good way of disseminating information concerning the latest changes and developments, as well as distributing recent publications. The meetings also provide a forum for informal technical help, and discussion with people doing similar jobs. Please ensure that your organisation is represented at your regional user group, and that appropriate people know about the various special interest groups, details of which can be found at:

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

The number of user groups has reduced as a result of decisions made at previous meetings.

During the reporting period UKERNA attended the following user group meetings:

- South West JANET Regional User Group – 22 January 2003. This was the last meeting of the group that has now split into two. The two new groups are the Welsh JANET User Group and the South West England Regional Network (SWERN) User Group;
- South East JANET Regional User Group - 29 January 2003. This group agreed to include members of the London User Group. The group heard a useful talk by John Green from JANET Computer Emergency Response Team (CERT) which was well received;
- JANET National User Group - 6 February 2003.

UKERNA also attended the UCISA Networking Group meeting on 18 February 2003.

Further details about UCISA can be found at:

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

4 Security Services

4.1 Security Monitoring and Information Dissemination

4.1.1 Response

This period has seen further significant increases in the number of incidents and informational reports received. Known vulnerabilities exploited in systems that have not been adequately patched and / or secured have continued to cause problems. It must be emphasised that even a small amount of patching and security put in place beforehand can save a significant amount of time after a system has been affected.

There have been a large number of incidents involving Structured Query Language (SQL) worms. Distributed Denial of Service (DDoS) agents and warez servers. The persistent problem of insecure mail relays also continues to cause difficulties.

During the reporting period, the JANET -CERT responded to 808 requests for assistance, 50 (6%) of which involved only JANET sites, 752 (93%) involved both JANET and other networks while 6 (1%) did not involve the JANET network and were passed to other agencies for action. In the same period 36,952 informational reports of unauthorised activity from the Internet were reported.

4.1.2 Awareness

The JANET security course has been presented twice this quarter, in Bristol and London. Internal trial runs have taken place of both the management and technical aspects of the re-written course materials and once comments from these have been incorporated it is planned that this updated course will replace the original one in the UKERNA training course schedule.

A two-day course for Incident Response Teams was presented in London in January as reported in section 3.4.1.

The Chief Security Adviser attended the JISC Services Conference and was able to talk to a number of staff of JANET -connected organisations.

4.1.3 Liaison

The application of legislation to computers and networks has been the subject of much debate and some progress has been made in the past three months. In January the Home Office published guidelines on how Internet services could be made safer for young children. Although UKERNA has no services that are specifically designed for children it is recognised that the JANET network may be of interest to them. A review meeting was therefore held to confirm that the Usenet News Service (a particular focus of the guidelines) met the recommended standard and to identify improvements in documentation that might further the aims of the guidelines.

Two consultation documents on Data Retention and Access to Data by Law Enforcement were published by the Home Office at the end of March. These include some of the suggestions that have been made by UKERNA through informal contact and a European Network of Inner Mission

Movements (EURIM) working group. At a consultation meeting the week after the guidelines were published, the opportunity was taken to discuss these in more depth with the Home Office teams. A UKERNA response to the consultation documents will be sent later in the consultation period.

UKERNA has also raised with the Home Office concerns that the draft Sexual Offences Bill does not provide legal protection to those at JANET sites who have to investigate network misuse as part of their job. It is hoped that this will be addressed during the progress of the Bill through Parliament.

As most security incidents are now international in scope, CSIRTs have for many years been seeking information on what incidents may constitute crimes in other European countries and how evidence needs to be collected and handled to support prosecutions. It is gratifying to note that after raising this problem with the European Commission, they have funded a project to develop a legal handbook for CSIRTs. UKERNA has attended two meetings with the project team to identify the requirements for the handbook as well as the limited existing materials, and look forward to using the handbook after the project is completed in the Autumn.

Within the JANET community we have attended meetings of the Universities and Colleges Information Systems Association (UCISA) Networking Group and the Irish Universities Information Systems Colloquium. At the national and international levels we have attended meetings of the UK Computer Emergency Response Teams (CERTs) group, the Internet Crime Forum and TERENA's CSIRT Task Force as well as a meeting between European CSIRTs and staff of the European Commission who are concerned with network security and incident response.

4.1.4 Information

Each month a summary of recent security activity is sent to site security contacts through the UK-security mailing list. Nine messages containing new or updated security information were sent to the list during the quarter including new vulnerabilities and 'Trojaned' code found in some popular products used within the community.

Further information on JANET-CERT can be found at:
<http://www.ja.net/CERT/>

5 Other UKERNA Activities

5.1 TERENA

The Trans-European Research and Education Networking Association (TERENA) was formed in October 1994 by the merger of the Réseaux Associés pour la Recherche Européenne and the European Academic and Research Network '...to promote and participate in the development of a high quality international information and telecommunications infrastructure for the benefit of research and education'. TERENA carries out technical activities and provides a platform for discussion to encourage the development of a high-quality computer-networking infrastructure for the European research community.

5.1.1 Mobility Group

On 16 December 2002, the TERENA Technical Committee approved the Mobility Task Force charter. The TERENA Mobility Task Force met in Amsterdam on 10 February 2003. The meeting began with a general update from NREN representatives on developments in the area. A summary of the joint UKERNA/University of Southampton Wireless Networks Survey results was also presented.

The latest version of deliverable B (a glossary of 'mobility' terms) was reviewed with contributions from all attendees. The first draft of deliverable C (Inter NREN roaming requirements) was reviewed and debated at length.

Initial drafts of deliverables D, E and F were also reviewed and discussed, however, the deadline for these items is not until April 2003.

Further information about the TERENA Mobility Group can be found at:
<http://www.terena.nl/tech/mobility/>

The TERENA Mobility Task Force charter is available at:
<http://www.terena.nl/tech/task-forces/tf-mobility/docs/TFMobilityCharter.pdf>

The analysis of the Wireless Networks Survey is available at:
http://www.ja.net/development/network_access/wireless/uk_activities

5.1.2 Task Force Computer Security Incident Response Team (TF-CSIRT)

UKERNA staff attended the meeting of TERENA's CSIRT Task Force in Zagreb in January. UKERNA staff are active in a number of the activities of the Task Force including the TRANSITS project to provide training courses for CSIRT staff, in which UKERNA is a partner with TERENA, and the European CSIRT Network (eCSIRT.net) project to develop the structured exchange of incident data between teams.

The proposal to create a handbook of European Law on computer crime to assist the work of CSIRTs, which was initiated by UKERNA more than four years ago, has been taken up by the European Commission and a contract placed with a commercial company. This quarter UKERNA have attended meetings to establish requirements for the handbook, and significant progress has been made.

5.1.3 Task Force Next Generation Networking (TF-NGN)

UKERNA continue to lead the Internet Protocol version 6 (IPv6) project of the joint TERENA/DANTE TF-NGN through Dr Tim Chown of the University of Southampton. UKERNA and Dr Chown are also working internationally on demonstrating the use of the Less than Best-Effort (LBE) traffic class for bulk data transfer and simultaneous live User Datagram Protocol (UDP) based applications.

UKERNA will be attending the next meeting of TF-NGN, in Poland in May 2003.

Further details about the TF-NGN activities can be found at:
<http://www.dante.net/tf-ngn/>

5.1.4 TERENA Networking Conference

UKERNA staff and other members of the UK academic community are members of the TERENA programme committee for the 2003 European Networking Conference. This conference will be held in Zagreb, Croatia from the 19–22 May 2003. The preliminary programme for this event can be found at:
<http://www.terena.nl/conferences/tnc2003/programme/>

Bookings for the conference are now taking place and details can be found at:
<http://www.terena.nl/conferences/tnc2003/registration/>

5.1.5 TERENA General Assembly

The TERENA General Assembly did not meet during the last quarter but will meet again immediately after the TERENA Conference in Zagreb on the 22 - 23 May, 2003.

5.1.6 TERENA Compendium

TERENA is working on the next version of the compendium. Data is being collected and will be presented on the web.

5.2 Development Activities

5.2.1 Broadband Network Development

5.2.1.1 Broadband Scotland

UKERNA continues to provide consultancy to the two Pathfinder project procurements for public service networking in the Highlands and Islands and the South of Scotland regions. UKERNA has also been working closely with the Spark project of the Scottish Executive Education Department (SEED), that aims to provide broadband connectivity to all schools in Scotland through the 32 Local Authorities. A Statement of Requirements document for circuits was issued in February. Procurement

is currently underway for routing equipment for the Local Authority sites. It is anticipated that the Spark Interconnect will be in place by the end of July 2003.

5.2.1.2 Welsh Video Network (WVN)

Funding has been confirmed for the continuation of the WVN Support Centre for a further three-year period. The Support Centre provides a single point of contact for support and maintenance for 90 videoconferencing studios across the FE and HE sectors in Wales. The majority of studios are now able to use IP based videoconferencing. Since the launch of the JANET IP Videoconferencing Service WVN Studios have made considerable use of these facilities and have thereby eliminated the direct cost of usage associated with the use of ISDN.

Further information about the Welsh Video Network can be found at:

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

5.2.1.3 The Lifelong Learning Network for Wales

Since the rollout of the Lifelong Learning Network for Wales (LLNW) core was completed at the end of July 2002, it has been used to connect 20 of the 22 Unitary Authorities in Wales to JANET. The remaining two are in the approval stage. It is hoped that all 22 authorities will be connected to JANET by the end of April 2003.

Around half of the 20 connected authorities are already using the new connection for many of their schools, libraries and Information Communication Technology (ICT) centres, as well as their own traffic. The remainder are well underway with the necessary upgrades to their local network infrastructure and are testing the connection to JANET. This constitutes Phase 2 of the Welsh Assembly Government's LLNW rollout and enables the authorities to switch all of their sites over to the new JANET connection.

The RSC Wales continues to be instrumental in assisting the authorities with the administration of their connections, on behalf of Welsh Networking Ltd.

5.2.2 UKLight

UKLight is intended to be a research friendly facility that provides bandwidth channels that can be managed through appropriate interfaces on network equipment. It will interconnect national UK organisations and partners to international collaborators in the US and Europe. At this stage the facility is a foundation for research and development into optical networking and it is hoped that if successful, and as technology develops, the facility itself will develop into a truly optical test bed.

A scientific case and a supporting proposal for the infrastructure of UKLight was presented to the JISC Committee for the Support of Research (JCSR). The JCSR approved the proposal; however funding approval was required from the Higher Education Funding Council for England (HEFCE) due to the nature of the funding stream targeted. HEFCE gave funding approval for UKLight in February 2003.

There are three elements to UKLight:

- international point of access and associated international network circuits;
- extension to the SuperJANET Development Network to enable access to the international point of access;
- UK based dark fibre infrastructure for photonics research.

JISC has asked UKERNA to manage the procurement, commissioning and subsequent operational management of all three components of UKLight. UKERNA are in the process of setting up the management structures for the project. It is planned to have the first meeting of the requirements and other groups identified, in April.

All information pertaining to the project will be posted on the UKERNA Web site as soon as possible.

5.2.3 Content Delivery Infrastructure Project

UKERNA continue to work with the Managing Agent and Advisory Service (MAAS), the JISC Committee for the Information Environment (JCIE) and the British Universities Film and Video Council (BUFVC) on the Content Delivery Infrastructure project. The project comprises six trial sites from both the HE and FE communities. During the equipment deployment phase of the project a number of issues were realised mainly concerning the functionality of content delivery software. As a result the project is now using alternative software and platforms on which to deliver content. The re-configuration and deployment of core trial equipment to use the alternative platform has resulted in a delay in the trial sites being able to use the content delivery infrastructure.

5.2.4 Co-location Services Development

Work is underway to identify a suitable location for a third co-location facility. The current facilities are based at the Reading and Leeds C-PoPs on the SuperJANET backbone. The third location aims to provide more flexible accommodation for equipment together with direct access to the SuperJANET backbone.

Details of this service are available at:
<http://www.ja.net/co-location/>

5.2.5 Internet2

A UKERNA representative will be attending the Spring Internet2 member meeting.

5.2.6 Quality of Service (QoS)

5.2.6.1 JANET QoS Development Project

The JANET QoS Development Project held its third meeting with partners (who replied to the Expression of Interest issued in April 2002) on 26 March 2003. At the meeting UKERNA provided an update on the status of the JANET backbone, and each of the partners gave an update on their intentions and work carried out to date. Contractual agreements were also discussed at the meeting and UKERNA is working to get contracts agreed and in place with the partners early in the second quarter of 2003.

Instrumentation is the first stage in implementing IP Premium (one of the QoS classes of services that has been chosen to deploy as part of this project), and has been completed on the JANET backbone. The next stage is to remark the Diff Serv Code Point (DSCP) of non-participating traffic entering the JANET backbone. Remarketing of non-participating traffic is planned to start during April 2003. UKERNA is planning to have the JANET backbone QoS enabled for IP Premium by the end of December 2003.

Further details of the JANET QoS Development Project can be found at:
<http://www.ja.net/development/qos/>

5.2.7 Internet Protocol version 6 (IPv6)

The JANET IPv6 Experimental Service has been running for some time now and applications continue to be received from the JANET community to use the service and to request IPv6 address space.

Details about the JANET Experimental Service can be found at:
<http://www.ja.net/development/ipv6/>

During the last quarter, investigations into deploying IPv6 / IPv4 dual stack across the SuperJANET backbone were undertaken. Appropriate testing was carried out by the JANET Network Operations and Service Centre (NOSC) and an implementation plan devised with the aim of introducing IPv6 / IPv4 dual stack by the end of May 2003. The two native IPv6 peering arrangements between JANET, British Telecom's UK6x and the LINX™ IPv6 infrastructure will terminate by the end of March 2003. To ensure that IPv6 connectivity remains with these two peering points until dual stack is implemented a tunnel will be established.

UKERNA is a partner in a European Commission funded project called 6NET. The aim of this project is to establish a pan European native IPv6 network to gain practical experience of managing and implementing an IPv6 network. The project officially began in January 2002. UKERNA has installed and commissioned the 6NET infrastructure in the UK to provide IPv6 connectivity to the UK Universities (University College London, University of Southampton and Lancaster University) that are participating in this project. During the last quarter a 6NET consortium meeting was held in Lisbon, Portugal, attended by UKERNA. Further details about the 6NET project can be found at: <http://www.6net.org/>

5.2.8 e-Science/Grid

HEFCE has formally approved funding for the UKLight project following a recommendation from the JISC Committee for the Support of Research. Developments within the UKLight project are reported separately in section 5.2.2.

Earlier this year a meeting was held at the National e-Science Centre (NeSC) to discuss support for e-science projects, representative from NeSC, UKERNA, the GRID Network Team (GNT) and the GRID Support Centre (GSC) were present.

5.2.9 SuperJANET Development Network

To support the development activities and the requirements of the research community a flexible network development infrastructure that is separate from the production network has been deployed. The SuperJANET Development Network is fully operational. Two guides which provide information on the facilities being offered by the development network, and a user guide for those development projects that have arranged time to use the development network can be found at: http://www.ja.net/development/SJ4Dev_Network

The Managed Bandwidth - Next Generation (MB-NG) project is currently using the development network, full details about this project can be found at: <http://www.mb-ng.net/>

5.2.10 JISC Authentication, Authorisation and Accounting (AAA) Programme

A meeting of representatives from the projects within the JISC AAA programme was held in London on 4 February 2003. For each project a brief presentation was delivered to introduce its area of work and this was followed by a general discussion. Significant debate was generated by the differences in approach to certificate management and certificate revocation issues.

Several aspects of certificate management were touched upon, including the scale of certificate creation and destruction at the start and finish of the academic year, and how to cope with people forgetting pass phrases for certificates - should new certificates be generated or should private keys be stored in a secure database to enable the existing certificates to be maintained?

With regard to certificate revocation, some groups were in favour of explicit revocation whenever necessary, while others planned to leave certificates active, but to change or remove the rights (authorities) associated with the certificate.

These differences will be explored as the projects progress and the results should be reported later this year.

5.3 Pilot Services

5.3.1 JANET Asymmetric Digital Subscriber Line (ADSL) Trial

UKERNA has been delivering an ADSL trial service to connect off-campus learning centres directly to the JANET network.

During the last quarter, UKERNA submitted a proposal to the JISC Committee for Networking (JCN) recommending the launch of a JANET ADSL service. The JCN however decided that the launch should not go ahead. The factors that led to this decision involved the uncertainty of the take up of the

service that in turn led to an unacceptable risk associated with funding the costs of the service. In addition, there are a number of commercial service providers who are offering a range of wider competitive services. An end-of-trial report is currently being produced and will be available during the next quarter on the JANET website.

Following an internal UKERNA meeting, a project to decommission the trial and the associated trial infrastructure has been initiated. This project will involve decommissioning the trial infrastructure and migrating the trial organisations to other ADSL providers. The aim is to complete this project by the end of May 2003.

Further information about the JANET ADSL trial can be found at:
http://www.ja.net/development/network_access/

5.3.2 JANET Satellite Pilot

UKERNA, in collaboration with the JISC Satellite Working Group, are piloting two-way satellite connectivity to the Internet. During the quarter the infrastructure for the satellite pilot was established. DC-Sat.NET completed the installation of Gilat (for individual users) and Broadband Interactive (BBI) (for connecting local area networks) satellite connectivity to 16 sites. In addition, the University of the Highlands and Islands Millennium Institute has created a Virtual Private Network (VPN) of five sites over the two-way satellite connection. DC-Sat.NET's support services (customer and technical helpdesk and dedicated website area) are established. UKERNA actively monitors and logs the performance of the BBI and Gilat satellite networks to each pilot site via its BBI satellite connection at its central offices in Chilton.

Bridge Broadband Enterprise has been selected to pilot a Hughes Network Systems™ Europe two-way satellite service that would support up to 150 PCs at Cornwall College Duchy campus. The service is scheduled to be operational in early June 2003; however, timescales and operation are subject to Radio Agency license approval.

JISC has appointed Audiovisual Technologies Informatics and Telecommunications (ATiT) as the preferred supplier to act as the independent evaluation team for the satellite pilot. The team will be responsible for producing an evaluation report of the technology pilots with recommendations. ATiT has attended a satellite installation as part of their evaluation process. ATiT is conducting questionnaire analysis and telephone interviews to gather feedback from pilot sites.

Further information about the service can be found at:
http://www.ja.net/development/network_access/satellite/trial.html

5.4 e-Learning

The Business Division is continuing to discuss e-Learning developments with the JANET community, and with organisations involved in aspects of the promotion, development and use of technology in teaching and learning.

UKERNA has been represented at events promoting the development of e-Learning in specific sectors including:

- Tutor Support Issues in e-Learning (The e-Learning Network)
- Net03 Exhibition
- 21st Century Networking (BECTa)
- The JISC Conference

There has been continued involvement with the Content Delivery Infrastructure Trial. The report for this project is due to be published in quarter two.

5.5 Further Education (FE) Liaison

The account managers have contributed to various RSC Technical Forums/events, a National Information and Learning Technologies Association (NILTA) conference on Disaster Planning and the RSC Annual Conference. There has also been involvement in evaluation of bids in the recent Learning

Skills Council (LSC) Intersite Funding for Colleges. Funding of £1m was available and some 160 bids were submitted of which about half received either the full amount asked for or a ceiling £30,000 partial funding. The National Learning Network (NLN) has recently launched a single national FE events web site and UKERNA are ensuring that its events and training courses are available from that site.

The Adult Community Learning (ACL) implementation group have finalised and submitted a proposal to the LSC that is awaiting approval. The recommendations cover connectivity, staff development and content development as major themes over the next three years. The primary model is to provide a single connection to each Local Authority, which then takes that forward to its own Wide Area Network (WAN)/Local Area Network (LAN) and thus to learning centres. Visits have been made to each of the Local Authorities with the highest numbers of FE Students to further understand the current arrangements for connectivity and to gather feedback on the proposals. A series of regional events has been planned by the National Institute of Adult Continuing Education (NIACE) on behalf of the LSC between April and June where Business Development staff will be presenting and running workshops.

The Business Division as a whole is looking at the issues involved in widening the JANET community. Eight visits were made to Local Education Authorities across England in March with a view to identifying the requirements of the Adult & Community Sector and how a JANET connection could be implemented and utilised.

6 UKERNA

6.1 UKERNA Staff

The following staff changes were recorded during the reporting period.

Leavers

- Janet Laurie, Account Manager, 28 February 2003

New Staff

- Mark Godfrey, e-Science Performance Network Officer, 3 March 2003
- Edward Wincott, Multi-site Connectivity Advisory Service Co-ordinator, 4 March 2003
- Sue McIntyre, Receptionist/Administrator part-time, 27 March 2003

Internal Changes

- Carole Mannix, to Facilities Manager, 24 February 2003
- Aileen Phillips, to Management Accountant, 24 February 2003

7 Further Information

Further information on any aspect of this report can be obtained through UKERNA's general enquiry point, JCS. They can be contacted using e-mail at: service@janet.ac.uk

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