



NETWORKSHOP® 38

AT THE UNIVERSITY OF MANCHESTER

30TH MARCH - 1ST APRIL 2010

CONFERENCE PROGRAMME AND EXHIBITION GUIDE

CONTENTS

Introduction and Foreword	2
Venue Information	
Registration and Information	6
Early Arrivals	6
Badges	6
Badge Identification	6
Car Parking	7
Bus Services	7
Security	7
Health	8
Emergency Procedures	8
Technical Communication	9
Accommodation	9
Meals and Refreshments	10
Drinks Reception with Exhibitors	11
Conference Dinner	11
Bars	12
Smoking	12
Facilities On and Near Campus	12
Sports Facilities	12
Useful Telephone Numbers	13
Local Information	13
Presentations and Speakers	
Programme of Events	14
Speakers' Information	24
Delegate Lounge	57
Exhibition	
Exhibition Floor Plan	58
List of Exhibitors	59
Exhibitor Profiles	60
Sponsors	90
Networkshop 39	91

INTRODUCTION

THE UNIVERSITY OF MANCHESTER & NET NORTH WEST



JANET(UK), The University of Manchester and Net North West welcome you to Networkshop 38.

The University of Manchester last hosted Networkshop in 2005, shortly after the creation of the University from The Victoria University of Manchester and UMIST.

The University is the largest single-site university in the UK. Networkshop 38 is being held in University Place, the flagship building at the heart of the campus, part of an extensive investment programme in new buildings and facilities.

Research is at the heart of The University of Manchester. Many of the major advances of the 20th century began here, including the work by Rutherford leading to the splitting of the atom and the development of the world's first modern computer. Historically, no fewer than 23 former staff and students have gone on to become Nobel Prizewinners.

The organising committee for Networkshop 38 in Manchester has been formed from staff of the University IT Services Division and Net North West.

The University IT Services Division is responsible for the IT infrastructure supporting the University campus. The campus network has a state-of-the-art high availability 10Gbit/s backbone and connects users across the University to the services provided by other teams. Reliable networking is an essential component of virtually every other IT development in the University. As well as connecting buildings across a large campus stretching from the city centre to one of Europe's largest concentrations of student accommodation in South Manchester the network supports the operation of a dual-site configuration for the University's significant investment in new corporate information systems to support all the University core business functions (research, teaching & learning and administration). As well as being the home of the world's first computer – the Manchester Baby developed in 1948, a working replica of which may be seen in the Manchester Museum of Science and Industry – Manchester led the development in 1995 of G-MING, the first UK Metropolitan Area Network linking all the Higher Education Institutes (HEIs) in Manchester.

In 1998 Net North West (NNW) was formed as a not-for-profit company to extend the G-MING concept across the North West. NNW is owned by 12 HEIs and the Daresbury Laboratory. The scope of NNW has grown and it now links some 120 JANET Connected Organisations (HEIs, FECs, Local Government, including the local RBC), the North West Learning Grid, and Research Council sites – from Lichfield in the south to Preston in the north. NNW also acts as a vehicle for inter-regional collaboration linking sites on behalf of its members and other customers as far north as Workington. The core backbone of NNW is based on dark fibre operating at 10Gbit/s which makes NNW well placed to continue to provide high speed connectivity across the region.

We haven't got a train trip for you this time but we are sure you will enjoy the technical and social programme that has been arranged.

Tim Robinson

Operations & Technical Director, Net North West

Darren Hankinson

Network Manager, The University of Manchester



NETWORKSHOP 38[®]

FOREWORD



Welcome to Networkshop 38 at The University of Manchester. The conference is returning to Manchester only 5 years after the last Networkshop was held there in March 2005. JANET(UK) is working with Net North West and The University of Manchester to jointly organise this year's event.

The programme sessions and the exhibition will be held in University Place, Oxford Road. The exhibition will be spread across two adjacent areas in University Place; the drum area and the restaurant, with only a glass wall separating them. To encourage attendance all refreshment breaks, apart from the lunches, will be held in the exhibition. This year the Conference Dinner will be held at The Monastery in Gorton with Lenny Henry as the after-dinner speaker. Accommodation will be provided in two Premier Inns close to the Oxford Road and facilities will be available off the bar area in one of the hotels for Birds of a Feather (BoF) sessions that wish to extend discussions into the evening.

The needs of JANET customers are varied and rapidly evolving. It is JANET(UK)'s role to ensure that JANET is maintained as a world leading education and research network that continues to meet these needs, both now and in the future, especially in the current economic climate. The Programme Committee has taken into account the event's technical focus while attempting to include subjects that will address the diverse interests of the delegates. We have retained the format of the event from last year and continued to include a second plenary session on the middle day but are maintaining a significant number of parallel sessions. This allows the programme to include a more varied set of talks. This year the exhibitor sessions are timetabled throughout the event and BoFs are arranged at the end of each day, some of which will extend into the evening in the accommodation venue. The programme is particularly full this year, with over forty sessions packed with information. With so much choice the Programme Committee is confident that there is something of interest to everyone.

Networkshop Online will provide an excellent source of information and other resources for Networkshop. Where possible all the sessions will be filmed and made available on Networkshop Online for future reference after the conference. The Delegates Lounge will provide a quiet space for delegates with comfortable seating, a PC cluster with access to Networkshop Online and power for delegates with their own laptops plus the opportunity to discover more about the variety of JANET services available to the community.

Networkshop is JANET(UK)'s opportunity to obtain feedback from the community. Every element of the conference will give delegates the opportunity for questions and discussion, with the parallels and BoFs in particular designed to facilitate interaction. With over 300 delegates from within and beyond the JANET community there should also be plenty of opportunity for information gathering and discussion outside of the formal sessions.

The Programme Committee would like to thank all of the presenters who have contributed to the programme, particularly those who provided their material in advance, enabling the production of this guide prior to the event. In this busy world your efforts really are appreciated.

The organisers of the event would like to thank the exhibitors as it's their attendance which helps to keep down the costs to the delegates. This year there are a number of new faces at the event, so please take the opportunity to visit the exhibition during the refreshment breaks. We would also like to encourage you to join the exhibitors for the Drinks Reception on the Tuesday evening.

There are others who also deserve a vote of thanks for their efforts in organising the conference. The team at Net North West led by Tim Robinson and the team at The University of Manchester led by Darren Hankinson have been involved in the arrangements since the first briefing in the early summer last year. From the JANET(UK) side, Wendy Salmon and Julie Nicholson have worked extremely hard to ensure that this year's event is a success and you have a comfortable stay; the Networkshop Online team led by Katherine Iles have put together all the online material for the event; and thanks to Jeremy Sharp and Rina Samani who have put together an interesting and varied programme. I should also like to thank Nathan Shelton for putting together this guide and all the other printed materials for this event.

Many thanks to everyone I haven't managed to mention, who has been involved in making the event a success.

I hope you find Networkshop 38 useful, interesting and enjoyable.

Shirley Wood
JANET Networkshop Co-ordinator

VENUE INFORMATION

REGISTRATION AND INFORMATION

The Conference Registration & Information Desk will be located in the Foyer of University Place, Oxford Road; delegates should register here on arrival for the conference.

Registration for the main conference opens at 10:00 on Tuesday 30 March. Pre-event workshop delegates may register earlier, as indicated below. The desk will be staffed as follows:

Monday 29 March	16:30 - 18:00
Tuesday 30 March	09:00 - 19:00
Wednesday 31 March	08:30 - 18:00
Thursday 1 April	08:30 - 13:30



EARLY ARRIVALS

Delegates arriving on Monday can register for the main conference as detailed above.

BADGES

On registering you will be given a conference badge that must be worn at all times to gain access to conference sessions, the Exhibition, and dining areas. Failure to wear your badge may result in admission being prohibited by University personnel.

Badge identification:	clear	<i>delegates</i>
	green	<i>exhibitors</i>
	yellow	<i>speakers</i>
	blue	<i>conference team/stewards</i>
	red	<i>visitors</i>

CAR PARKING

If you are staying at one of our hotels they have an arrangement with a nearby NCP car park although space is limited and not guaranteed. The nearest car park to University Place is the Manchester Aquatics Centre multi-storey car park on Booth Street East which offers paid car parking between 06:00 and 23:00 @ £8.00 per day. This car park is locked overnight with no access to vehicles during that period. Please refer to our maps for locations.



BUS SERVICES

The walking time between the hotels and University Place is 20-25 minutes. We have negotiated an arrangement with Stagecoach Manchester whereby all delegates will have received a voucher which can be exchanged for free (to you) travel on buses along the Oxford Road between venue and hotels. Refer to our maps and also the back of the voucher for more information on bus stops and numbers.

SECURITY

Should an accident, criminal act or suspicious incident occur at University Place it must be reported without delay to University Security Services on **0161 306 9966**. Please also notify the Networkshop Conference Desk in the foyer of University Place so that they are aware of the incident.

Delegates are requested to reduce the risk of thefts by not leaving valuables unattended on University premises. Subject to their statutory rights, the University will accept no responsibility for accidents to delegates while on its property, or damage to, or loss of, their personal property.



HEALTH

Should you require medical attention contact the Conference Desk or, in an emergency, contact University Security personnel who are all first aid trained. The nearest hospital with an A&E department is the Royal Infirmary Hospital, Oxford Road, Manchester M13 9WL. The Accident and Emergency (A&E) department is open 24 hours. The entrance is near the corner of Grafton Street and Upper Brook Street. A&E is for injuries and serious problems requiring immediate treatment. A&E reception phone: **0161 276 4147.**

Please report accidents or ill health to the Conference Information Desk, especially if this leads you to departing early from the Conference.

EMERGENCY PROCEDURES

Please familiarise yourself with the University's emergency procedures, especially in the event of fire, at the earliest opportunity.

FIRE EVACUATION PROCEDURES – ON DISCOVERING A FIRE

- Give alarm – break glass at the nearest alarm point
- **DO NOT** attempt to extinguish the fire yourself
- Close doors and windows before evacuating
- Warn people in nearby rooms

FIRST STAGE ALARM

Indicated by flashing strobe lights. You need not take any action during this stage of the alarm.

SECOND STAGE ALARM

Indicated by an audible electronic alarm punctuated by the repeated verbal instruction informing you that **we have an emergency situation and that you MUST evacuate the building immediately and move to the assembly point.**

Everyone MUST evacuate the building immediately and move to the assembly point.

- Close doors and windows
- Do not rush
- Do not wait to collect personal belongings
- **DO NOT USE LIFTS**
- Do not re-enter the building without permission



The assembly point for this building is the paved area in front of the Williamson Building.

PLEASE NOTE Alarms are tested at 9 am every Tuesday.

Telephone the Security Lodge with details. 69966 (internal line) or 0161 306 9966

TECHNICAL COMMUNICATION

Communication facilities – including Internet access and Wireless LAN – will be available to delegates during the conference. Full details will be provided with your joining instructions prior to the event and on the website. Wireless networking will be available in all of the conference areas. This will be fully integrated with JANET Roaming.

PCs with Internet access will be available to all delegates in a designated area of the Delegate Lounge in the exhibition area located in the Restaurant (see exhibition plan).

ACCOMMODATION

You will have been notified of the Premier Inn in which accommodation has been reserved for you in your joining instructions.

Accommodation, based on single occupancy, will be in en-suite rooms with hospitality tray and complimentary wifi. A full English breakfast is included.

Hotel Check-in

Delegates arriving on Tuesday may check-in to their hotel at a special Registration Desk located alongside Networkshop Conference Registration in the foyer of University Place. This will save time later on as you will be able to go straight to your room on arrival at the hotel. Alternatively you may still check in at the hotel if you prefer to go there first but please note that the official check-in time for the hotel is from 14:00 – rooms may be ready earlier but this cannot be guaranteed. There is a luggage store.

Arrivals on Monday and Wednesday should go straight to their designated hotel and check in at the Reception Desk there.

MEALS & REFRESHMENTS

(Please see the programme in the Guide for confirmation of times.)

Breakfast will be served in your hotels from 07:00 to 08:45.

Mid-morning and mid-afternoon refreshments will be served in the Exhibition areas in University Place.

A buffet lunch will be served each day – Tuesday, Wednesday and Thursday – in the marquee adjacent to University Place. Coffee and tea after lunch will be served in the Exhibition areas on Tuesday and Wednesday, and in the marquee on Thursday.

A buffet supper will be served in the marquee on Tuesday night, from 18:30 – 20:30.

Delegates who have to leave immediately sessions finish on Thursday may order a packed lunch to take with them. Please order this in advance of the event, or through the Information Desk no later than **13:00 on Tuesday**.



DRINKS RECEPTION WITH EXHIBITORS

Delegates are invited to join Exhibitors for a Drinks Reception from 17:30 to 18:30 on Tuesday 30 March. This will take place in the Exhibition areas. This has been kindly sponsored by H₂O Networks.

CONFERENCE DINNER

On the evening of Wednesday 31 March we will take you by private coach to **The Monastery Gorton**; this will take approximately 10-15 minutes.

Coaches will depart promptly at 19:00 from outside Bridgewater Hall close to the **Premier Inn Central** on Lower Mosley Street, but please assemble to board the coaches from 18:45. During your short ten minute journey a DVD explaining about The Monastery at Gorton will be played.

Dress is smart casual.

After dinner coaches will depart for the journey back to hotels at 23:00. At The Monastery Gorton there will be a drinks reception before dinner when delegates will have time to enjoy their surroundings and speak to experts who can provide more information about a fascinating building which is listed as one of the 100 most endangered sites in the world. Former home to the Franciscans, the Monastery is regarded as a Pugin architectural masterpiece and has undergone an extensive six million pound heritage restoration scheme to transform it into an inspiring venue for corporate and social occasions. You can view the website at <http://www.themonastery.co.uk/>.

A bar will be available for the purchase of drinks during the dinner – located in the Confessionals!

We are delighted to announce that this year we have engaged a celebrity after-dinner speaker. Lenny Henry, comedian, thespian and Comic Relief champion has also in recent years experienced the University system. In 2007, he graduated from the Open University with an English degree and is now studying for an MA in screenwriting.



BARS

Both hotels have a residents' bar. Otherwise the excellent facilities of Manchester town centre are a short walk from your accommodation.

SMOKING

This is a **“NO SMOKING”** conference. Please refrain from smoking within any of the University buildings.

FACILITIES ON AND NEAR CAMPUS

All the facilities of Manchester are within walking distance of the hotels and University Place. Hotel staff will be delighted to give you more information or pop in to the Visitors' Centre on the ground floor of University Place, near the main entrance and adjacent to our Exhibition area. You can also consult the websites listed below.

SPORTS FACILITIES

One of our hotels, the Premier Inn Central on Lower Mosley Street has a gym – **“Fitness First Health Club”** – to which all Networkshop delegates, whether resident here or at the Premier Inn City Centre on Portland Street, will be given access on production of your key card.

The University are arranging for all our delegates to have staff rates to use the swimming facilities at the **Manchester Aquatics Centre** on Booth Street, close to University Place. The state-of-the-art, purpose-built swimming facility offers separate diving and leisure pools. There is also a fitness suite. It is open from 06:30 to 22:00 each weekday, subject to restrictions due to special events. For more information please see: <http://www.manchestersportandleisure.org/venue/manchester-aquatics-centre>.



USEFUL TELEPHONE NUMBERS

Networkshop 38 Conference Desk **0161 306 4098**

University Security Services **0161 306 9966**

Emergency services from an internal
University telephone **999**

Hotels:

Premier Inn City Centre, Portland Street **0870 238 3315**

Premier Inn Central, Lower Mosley Street **0870 990 6444**

<http://www.premierinn.com/en/>

Aquatics Centre **0161 275 9450**



LOCAL INFORMATION

Travel

Links to the University's website for further information on the locations we will be using can be found on the Networkshop website or log-in to Networkshop Online for interactive maps.

<http://www.ja.net/services/events/2010/networkshop-38/information.html>

Taxis

Mantax **0161 230 3333**

Radio Cars **0161 236 8033**

Tourist Information

More information for visitors to Manchester, including travel and site maps, can be found at:

<http://www.visitmanchester.com/>, tel: 0871 222 8223.

You can also pick up a hard copy Campus Guide from the Visitors' Centre in University Place.

PROGRAMME OF EVENTS

TUESDAY, 30 MARCH 2010

- 10:00 – 13:30 *Registration – Foyer, University Place*
Refreshments and Exhibition – Ground Floor, University Place
- 12:30 *Lunch – Marquee*
- Plenary Session Shirley Wood, JANET(UK), Lecture Theatre B, University Place
- 13:45 *Welcome*
Paul Harness, The University of Manchester
- 14:00 *JANET Update*
Tim Kidd and Jeremy Sharp, JANET(UK)
- 14:45 *The Use of Networks in Polar Regions*
David Blake, British Antarctic Survey
- 15:30 *Refreshments and Exhibition – Exhibition Area*



TUESDAY, 30 MARCH 2010 (CONTINUED)

16:15 – 17:30 Parallel Sessions – University Place

Session 1a	Session 1b	Session 1c	Session 1d	Session 1e
<i>Optical Networking</i>	<i>A Secure World</i>	<i>Voice / Video</i>	<i>Exhibitor Session – A</i>	<i>Exhibitor Session – B</i>
Room: Lecture Theatre B	Room: Lecture Theatre A	Room: 2.220	Room: 1.219	Room: 1.218
Chair: David Salmon, JANET(UK)	Chair: Mark O’Leary, JANET(UK)	Chair: Roger Bolam, JANET(UK)		
16:15 <i>An overview of the main technologies behind optical communications</i> Periklis Petropoulos, University of Southampton	16:15 <i>Waking up securely: A story of Wake on LAN and 802.1X</i> Alec Edworthy, Loughborough University	16:15 <i>Videoconference Update</i> Roger Bolam and Tim Boundy, JANET(UK)	16:15 <i>DNS: Best Practice</i> Paul Roberts, Tuscany Networks	16:15 <i>BEYOND ETHERNET: Finding the Role for Wireless at Manchester University</i> Robert Fenstermacher, Aruba Networks
16:45 <i>Migrating to a Packet Optical Network</i> Thomas Sims, Verizon	16:40 <i>Understanding Server Certificate Validation and 802.1x Update</i> Kevin Koster, Cloudpath Networks	16:40 <i>The View in Ultra High Definition</i> Ade Fewings, C.A.S.T. Limited	16:50 <i>IP Address Management on hardware and VM, the best of both worlds.</i> Simon Lowery, IP Performance / BlueCat Networks	16:50 <i>IF-MAP</i> Chris Marrison, Infoblox
17:05 <i>Optical fibre infrastructure, the Lancaster way</i> Paul Boyd, University of Lancaster	17:05 <i>Challenges for wide scale 802.1x deployment</i> James Hooper, University of Bristol	17:05 <i>Asterisk for the Enterprise</i> Dave Reeve, Canterbury Christ Church University		

TUESDAY, 30 MARCH 2010 (CONTINUED)

17:45 – 18:30

*Birds of a Feather Sessions***Birds of a Feather A**

Chair

Room

Lecture Theatre A

Birds of a Feather B

Chair

Room

I.219

Birds of a Feather C

Chair

Room

CSIRT

James Davies, JANET(UK)

I.218



17:30 - 18:30

Wine Reception and Exhibition – Exhibition Area, sponsored by H₂O Networks

18:30 – 20:00

Dinner – Marquee

20:00 – 22:30

Birds of a Feather Sessions – Premier Inn Central, Lower Mosley Street, off Bar Area

Developing common open source tools such as RTG, NAGIOS and NetDISCO for network monitoring

Alan Buxey, Loughborough University

ResNet meeting

Lee Stott, University of Manchester

WEDNESDAY, 31 MARCH 2010

07:00 – 08:45	<i>Breakfast</i> – Hotels
Plenary Session	Roland Trice, JANET(UK), Lecture Theatre B, University Place
09:00	<i>The World Wide Web of Glass: The Past, Present and Future of fibre optics</i> David Richardson, University of Southampton
09:45	<i>DNS Security</i> Cricket Liu, Infoblox
10:30	<i>Refreshments and Exhibition</i> – Exhibition Area
11:15 – 12:30	Parallel Sessions



WEDNESDAY, 31 MARCH 2010 (CONTINUED)

Session 2a
Network Access
Room: Lecture Theatre B
Chair: Josh Howlett,
 JANET(UK)

Session 2b
Campus Networking
Room: Lecture Theatre A
Chair: Henry Hughes,
 JANET(UK)

Session 2c
Network Engineering
Room: 2.220
Chair: Rina Samani,
 JANET(UK)

Session 2d
Exhibitor Session – C
Room: 1.219

Session 2e
Exhibitor Session – D
Room: 1.218

11:15

JANET Network Access
 Mark O’Leary,
 JANET(UK)

11:40

*Portable WLANs –
 Networking for off-the-
 grid locations*
 Trevor Collins, Open
 University

12:05

Wimax vs LTE
 Duncan Wall, UK
 Broadband Ltd

11:15

*Socket: IPAM,
 Network Management
 & Visualisation with
 Google Earth*
 Michael Jorgenson,
 Cardiff University

11:40

*A distributed, robust
 network architecture built
 on an ensemble of open-
 source firewall routers*
 Simon Boggis, Queen
 Mary University of
 London

12:05

*DNS Servers, the
 More the Merrier*
 Alexander Clouter,
 School of African
 and Oriental Studies

11:15

*IP Multicast, Embrace
 the challenge?*
 Paul Catchpole,
 University of Warwick

11:40

*Making network
 resilience resilient*
 Mark Charlton,
 University of Warwick

12:05

*Making your 3 tier
 network reconverge in
 (2) seconds*
 Paul Brennan and Peter
 North, University of
 Coventry

11:15

*The impact of structured
 cabling selection on
 energy efficiency and
 power consumption*
 Glynn Phillips, Nexans
 UK Ltd

11:55

*How Using IP
 Technology over a
 fibre network is cost
 and time effective for
 universities*
 Jen Moxey, Napier
 University Network
 Manager on behalf
 of H₂O Networks

11:15

Barracuda Networks

11:55

*Reducing the carbon
 footprint of your network
 infrastructure*
 Clive Allen, HP
 ProCurve Networking

WEDNESDAY, 31 MARCH 2010 (CONTINUED)

- 12:30 *Lunch – Marquee*
Refreshments and Exhibition – Exhibition Area
- Plenary Session Jeremy Sharp, JANET(UK), Lecture Theatre B, University Place
- 14:00 *Networks and the Law: 2010*
Andrew Cormack, JANET(UK)
- 14:45 *IPV6 / IPV4 Debate*
Tim Chown, University of Southampton
John Linn, ABMAN
- 15:30 *Refreshments and Exhibition – Exhibition Area*
- 16:15 – 17:30 Parallel Sessions



WEDNESDAY, 31 MARCH 2010 (CONTINUED)

Session 3a
A Changing World
Room: Lecture Theatre B
Chair: Rina Samani,
 JANET(UK)

Session 3b
Room: Lecture Theatre A
Chair: David Richardson,
 JANET(UK)

Session 3c
Access Management
Room: 2.220
Chair: Mark Tysom,
 JANET(UK)

Session 3d
Exhibitor Session – E
Room: 1.219

Session 3e
Exhibitor Session – F
Room: 1.218

<p>16:15 <i>Universities in a network world, or how to stop worrying and learn to love the Internet</i> Nick Skelton, University of Bristol</p> <p>16:40 <i>Herding Cats in South Staffordshire</i> Peter Harrison, South Staffordshire College</p> <p>17:05 <i>campusM Mobile Architecture</i> Hugh Griffiths, oMbiel</p>	<p>16:15 <i>Reducing DNS Caching (or “How low can we go?”)</i> Saleem Bhatti, University of St. Andrews</p> <p>16:40 <i>Wireless Standards/ Developments</i> Matthew Gast, Trapeze Networks</p> <p>17:05 <i>Control Plane Developments</i> Warren Matthews, JANET(UK)</p>	<p>16:15 <i>JANET Roaming Futures</i> Alan Buxey, Loughborough University</p> <p>16:40 <i>Access Management Futures</i> Josh Howlett, JANET(UK)</p> <p>17:05 <i>JANET Roaming deployment for Networkshop</i> Mike Richardson, University of Manchester</p>	<p>16:15 <i>Realtime Protocol Based Proactive Protection Against Malware Infections in Windows Networks</i> David Robinson, Norman Data</p> <p>16:50 <i>Unified Communications in a Visual Environment</i> John Martin, TANDBERG and Richard Middleton, Direct Visual</p>	<p>16:15 <i>Infection Control – An integrated approach to network security</i> Rick LeClerc, Bradford Networks and Andrew Brimson, Khipu Networks</p> <p>16:50 <i>The Physical layer – A vital system component or just an inconvenient necessity?</i> Mike Collins, Molex Premise Networks</p>
--	---	--	---	--

17:45 – 18:30

Birds of a Feather Sessions

Birds of a Feather D

Chair

Room Lecture Theatre A

Birds of a Feather E

Chair

Room 1.219

Birds of a Feather F

Chair

Room 1.218

18:30 Finish

19:00 Coach pickup from Premier Inn Central, Lower Mosley Street to The Monastery in Gorton

19:30 *Drinks Reception* – The Monastery

20:00 Conference Dinner

22:00 After Dinner Speaker – Mr Lenny Henry

23:00 Coaches depart for Premier Inn Central, Lower Mosley Street

**THURSDAY, 1ST APRIL 2010**07:00 – 08:45 *Breakfast* - Hotels

09:00 – 10:30 Parallel Sessions

THURSDAY, 1ST APRIL 2010 (CONTINUED)

Session 4a

Measurement and monitoring

Room: Lecture Theatre B

Chair: Victor Olifer, JANET(UK)

Session 4b

Networking during an economic crisis

Room: Lecture Theatre A

Chair: Rob Evans, JANET(UK)

Session 4c

Rapid Fire – Hints, Tips & Secrets

Room: 2.220

Chair: Rolly Trice, JANET(UK)

Session 4d

Exhibitor Session – G

Room: 1.219

Session 4e

Exhibitor Session – H

Room: 1.218

09:00

Deep packet Inspection: Technology, Applications and Net Neutrality
Klaus Mochalski, Ipoque

09:30

Network Measurement Reuse
David Parish, Loughborough University

10:00

Network Research, Privacy and the Law
Andrew Cormack, JANET(UK)

09:00

Every Cloud has a Silver Lining
Alan Benson, University of Aberdeen and Edmund Sutcliffe, Independent Consultant

09:30

Server room / data centre efficiency savings
David Round, Bangor University

10:00

Outsourcing mail and associated services - do we gain or lose?
Robin Breathe and Simon Hogg, Oxford Brooks University

09:00

During this session there will be a series of presentations lasting no more than 10 minutes. This will open the floor to the community to present any hints, tips and/or secrets they'd like to share on ANY aspect of managing the network within their campus.

Typical topics include:

Multicast monitoring
Tim Chown, University of Southampton
How delicious tags, blogs and twitter can be linked to keep staff/students up to date
Ken Scott, JISC RSC Yorkshire and Humberside

Preparing your site for the cloud. What steps do you need to take to ensure your network is ready for cloud computing?
Matthew Cook, Loughborough University

How to cope with an Estates Development Framework
Bruce Rodger, University of Strathclyde

10:15 Questions**09:00**

Mutiny, Network Monitoring, and the Academic Community
Andy Murray, Mutiny Limited

09:45

How Network Rightsizing addresses budget limitations
Roger Hockaday and Glyn Brice, Ensign Communications

09:00

USA v Europe: A comparison of bandwidth usage and management policies in US and European universities

John Brosnan, Netfort Technologies

09:45

Simplifying IT Complexity with Cloud Computing – Improving Operational Efficiency and Reducing Cost
Mark Beaumont, Verizon Business

THURSDAY, 1ST APRIL 2010 (CONTINUED)

- 10:30 *Refreshments and Exhibition* – Exhibition Area
- Plenary Session Shirley Wood, JANET(UK), Lecture Theatre B, University Place
- 11:15 *An Infrastructure Challenge in the Digital Economy*
Derek McAuley, University of Nottingham
- 12:00 *Summing up and Close of Conference*
- 12:30 *Lunch* – Marquee



SPEAKERS' INFORMATION

Alan Benson, University of Aberdeen and Edmund Sutcliffe, Independent Consultant

BIOGRAPHY

Alan Benson and Edmund Sutcliffe have been working both together and separately on the problems of service delivery in IT environments for the last 15 years. They have been developing and supplying agile and flexible environments for service delivery in various education and commercial environments over this time. Currently Alan is the Server Infrastructure Manager at the University of Aberdeen and can be reached at a.benson@abdn.ac.uk. Edmund is an independent consultant specialising in agile service focused infrastructures and answers to edmunds@panic.fluff.org.

ABSTRACT

Every Cloud has a Silver Lining

Electricity is supplied at the flick of a switch. There is as much of it or as little of it as you need on demand. Modern business drivers and frameworks such as ITIL are increasingly viewing computing and infrastructure from this service perspective. This demands a flexible, agile and rapidly scalable infrastructure which is highly resilient and cost-effective. The much hyped concept of cloud computing seems to offer a way to address these challenges, but comes with its own problems. Do you trust your cloud supplier? Can you even be certain exactly who is providing the cloud, rather than just the badge? During this presentation we will not only show you the principles and techniques for building and maintaining your own agile Private Cloud, but will also demonstrate the build process in action. We will show you how to reap the benefits that the likes of Google and Amazon have built businesses on.

Saleem Bhatti, University of St Andrews**BIOGRAPHY**

Saleem Bhatti is a Professor at the School of Computer Science, University of St Andrews. He is currently the leader for the “Next Generation Internet” Theme of Scottish Informatics and Computer Science Alliance (SICSA), a pan-Scottish research pool. His research interests include novel network architectures, mobile and heterogenous networked systems (e.g. MANETs) and network security. More recently, he has been examining issues in system-wide energy efficiency in networked and distributed systems. He is also involved with industry in various consultancy roles in the area of networking technology and systems.

ABSTRACT

Reducing DNS Caching (or “How Low Can we Go?”)

Motivated by our ongoing work exploring an alternative Internet architecture, we wish to make use of naming services in order to support functionality such as application and/or virtual machine migration; host and network mobility; and various forms of traffic control (e.g. multi-homing). Currently, the Domain Name System (DNS) is used to resolve names to DNS records, with relatively large time-to-live (TTL) values (several thousands of seconds) for caching the results. To support new agile services and systems, cached results may need to have much lower TTL values, so that cached DNS values do not become stale as system changes occur, e.g. changes to end-system location information to support new methods of mobility. However, current conventions for DNS configuration normally use conservatively high TTL values. We have conducted an empirical study of a live DNS deployment where we have reduced to very low values for the entire School of Computer Science at the University of St Andrews. Our results show that the increase in DNS load is lower than expected, looking like it follows a power-law decrease with respect to the TTL value of DNS records. We propose that the use of TTL values as low as zero are possible for DNS A records in normal operation.

David Blake, British Antarctic Survey**BIOGRAPHY**

David Blake is Head of Technology and Engineering at the British Antarctic Survey (BAS). His responsibilities include the management of technology and engineering research and the development and provision of equipment and facilities in Antarctica and Cambridge. Technology is necessary to enable living and working in Antarctica and a sustainable approach is essential to meet environmental commitments and contain costs. The environment in Antarctica pushes the limits for equipment and infrastructure and emphasis is placed on providing reliable systems which can be operated and supported by a wide range of personnel. Communications are essential for the transfer of science information and ensuring that operational activities are managed safely and effectively; delivering reliable and cost effective communication networks is a key objective. David's work also includes ships and airborne platforms and ensuring a sustainable approach to their operation is a key driver.

David is Chair of the IET's technical and professional network on engineering for a sustainable future. He also chairs the Antarctic community's network on energy management.

Before joining the British Antarctic Survey in 1991, David worked for the Ministry of Defence and within the electronics industry as an engineer.

ABSTRACT*The Use of Networks in Polar Regions*

Communications are essential in the polar regions for the effective management of operational activities and to enable data to be transferred to and from research facilities. The limited cable and satellite connections are expensive and have low bandwidth capability. The presentation will include the use of the existing networks, satellite systems, the management of bandwidth and future requirements.

Simon A. Boggis, Queen Mary, University of London

BIOGRAPHY

Simon is Senior Network Analyst at Queen Mary, University of London where, since 2004, he has been part of a small team responsible for the planning, development, support, integrity and security of a large data and telephony network serving 17,000 users distributed across Central and East London. Prior to this, Simon was Senior System Programmer in the Department of Computer Science from 1998 to 2004.

Simon was educated at Queen Mary, University of London and the University of Southampton where he obtained BSc (Hons) in Chemistry in 1992 followed by a PhD in Physical Chemistry in 1996.

ABSTRACT

A Distributed, Robust Network Architecture Built on an Ensemble of Open-Source Firewall-Routers
At Queen Mary, University of London the use of commodity PC server hardware and Open-Source software allows us to deliver a highly-distributed, robust, resilient, flexible core network for a medium-large University at modest cost. Due to a high degree of parallelism we are able to provide scalability and sophisticated firewall-router functionality whilst maintaining high performance. The distributed nature of our design permits resilience and robustness by removing single points of failure and builds-in problem isolation. The core network has been factorized into a high-performance, resilient 10 Gbit/s switched fabric (Hewlett-Packard) which interconnects an ensemble of twenty identical 4 x 1 Gbit/s Open-Source firewall-routers (GNU/Linux). The ensemble provides distributed, robust IP network services: policy routing, stateful filtering, client-separation, traffic shaping, captive-portal authentication, abuse block notification, DNS, NTP, DHCP and sophisticated diagnosis capability.

The philosophy, design and implementation of our network will be discussed, together with a critical appraisal of the advantages and disadvantages. Finally, an outline will be given of current and future developments to provide fully automatic resilience and fail-over services to Departments to support 24x7 working.

Roger Bolam, JANET(UK)**BIOGRAPHY**

Roger has worked within the JANET environment for over 10 years. Initially looking after the development of voice and video technologies he now manages JANET(UK)'s Network Applications Group, managing the development of voice and video, network monitoring and measurement and green computing.

ABSTRACT*Videoconference Update*

The JANET Videoconferencing Service has been operation for nearly 14 years and in that time has seen a significant growth in usage and technology. To ensure that the JANET Videoconferencing Service is "fit for the future" JANET(UK) has undertaken a strategic review. The presentation will cover the high level findings of the review and will set out JANET(UK)'s plans to meet any requirements coming out of the review.

Tim Boundy, JANET(UK)**BIOGRAPHY**

Tim joined JANET(UK) in September 2006 as Schools Content Coordinator. Building on his previous role as Education Officer at the National Space Centre, Tim now advises the UK cultural sector on delivering educational content to schools via videoconference. He also works with Local Authorities and Regional Grids for Learning to encourage the use of videoconferencing in schools.

ABSTRACT*Videoconference Update*

Many museums, galleries and archives now use videoconferencing to deliver exciting educational content to UK schools. JANET(UK) supports cultural institutions in their use of the JANET Videoconferencing Service (JVCS) to deliver educational videoconferencing across the National Education Network. Schools use the powerful features of the JANET Videoconferencing Service to arrange all aspects of their videoconferences. In this presentation Tim Boundy will provide some examples of the exciting educational content that is currently available via videoconference, and provide some case studies from videoconference champions in the schools sector.

Paul Boyd, University of Lancaster

BIOGRAPHY

Paul Boyd has worked in the networking team at Lancaster University since 2000. His main areas of interest are local and wide area wireless networks, DWDM fibre systems and investigating emerging technologies. He has worked extensively on wide area networks managed by the University throughout Cumbria and Lancashire

ABSTRACT

Optical fibre infrastructure the Lancaster way

Lancaster University in common with many higher education institutions had a fibre infrastructure that had evolved over many years. The myriad of different connector types, unknown fibre routes and an increase in damage to cables as new buildings were constructed indicated a system nearing the end of its life. The decision was made to construct a brand new campus-wide fibre system providing dual resilient connectivity between the University's two core routers and the main building aggregation routers. The design allows for future flexibility in network design by massive over provision of fibre capacity and also incorporates facilities for minor fibre distribution for both network traffic and other services such as fire alarms and CCTV.

Robin Breathe, Oxford Brooks University

BIOGRAPHY

Robin Breathe studied mathematics at Oxford before moving up the hill to Oxford Brookes where he has worked for the past eight years, obtaining a second Masters in Mobile and High Speed Telecommunications in the process. For the first seven years he worked in the systems team, both developing and maintaining the University's central server infrastructure and core services, as well as redeveloping the halls of residence network and rolling out eduroam. In September 2009 he took on the role of Network Manager and, as joint IT strategic lead, is currently working on server and desktop virtualisation, centralised storage consolidation, identity management, the transition to Google Apps, and a full network refresh.

ABSTRACT

Outsourcing mail and associated services - do we gain or lose?

Oxford Brookes has decided to use Google, primarily for mail and calendaring. This has come about after senior management required that the University provides an integrated solution, rather than a traditional open source solution for such services, usually found in the community.

Paul Brennan, University of Coventry**BIOGRAPHY**

Paul is currently the Head of IP Infrastructure at Coventry University and manages a team of 8 covering all aspect of Voice and Data connectivity. Having started his IT career looking after a small Novell network for a sales and distribution company he went on to form his own company in 1996 providing IT Maintenance and Service to SMEs in Greater and Central London. After selling the business in 2000 he went on to work for RMC (Ready Mixed Concrete), firstly providing IT Support and solutions for their Building Products division, then for their Waste division before finally moving to Rugby to become Data Centre Manager.

In 2005 Paul moved to Capita IT Solutions as an Operations Manager providing troubleshooting for two projects: a local council in the Midlands and outsourcing an internal helpdesk to Mumbai.

At the start of 2007 Paul started working for Coventry University responsible for the Network. He has worked on an entire network replacement, installation of ubiquitous wireless service and security and service improvements throughout. Paul is CCSP certified as well as holding a number of Cisco Specialist Qualifications.

ABSTRACT

Making your 3 tier network reconverge in (2) seconds

The aim of the presentation is to provide information on the implementation of redundancy and high availability technologies in a network using Cisco hardware. The presentation will cover the use of technologies such as HSRP, rapid spanning tree, EIGRP and stateful failover to achieve redundancy and high availability. The presentation will also cover how to speed up network convergence times using these technologies by altering timer values, providing greater return on investment. It will also give examples of problems faced while implementing these changes on a production network and the benefits gained since the completion of the changes.

Alan Buxey, Loughborough University

BIOGRAPHY

Alan has more than 22 years of experience in computer technology, building up a fundamental knowledge of IT from an early interest in computing as a teenager. Since 1994 he has been actively involved in IT development within the academic world, starting off with UNIX workstation management and moving to the field of internetworking via beowulfs and GRID. He is employed as a Senior IT Service Specialist at Loughborough University with primary roles in logical networking and wireless and is an active participant in several key technical groups regarding this sphere of technology. Alan is currently seconded to JANET(UK) for JANET Roaming national support and development functions as well as representing JANET(UK) within eduroam where he is also the current UK GEANT IdP User Admin.

ABSTRACT

JANET Roaming Futures

In May 2010, the JANET Roaming Service will be celebrating its 4th birthday, having been an official production service since May 2006. During this time the service has seen large growth in numbers of sites participating and of remote authentications being handled across the proxied hierarchy. This talk will cover new features of the central service management platform; forthcoming technologies that will enhance the service (for administrators and end users alike!); work that has been undertaken alongside strategic partners to deliver better service details for both end users and administrators to aid easier deployment of the eduroam service for all involved; and with presentation of two JANET Training courses specifically targetting the JANET Roaming Service.

Paul Catchpole, University of Warwick

BIOGRAPHY

Paul Catchpole is an experienced network engineer with a ten year background in Cisco & Extreme, enterprise and campus network deployments. He has recently worked in rolling out IPTV & DVB tripleplay services across a 50-country estate in the Hospitality industry, and is now involved with the University of Warwick in the development and deployment of new network services.

ABSTRACT

IP Multicast – Embrace the challenge?

From frustration in getting workstations imaged, to delivering IPTV to residences, to ensuring a global audience for media courses, pressure to get the multicast packets moving and duplicating without adversely affecting the rest of the network is growing...

This presentation examines the basic requirements for setting up multicast, looking into some of the common problems and challenges, and how to find the solutions. Secondly, it will look into aspects of ongoing management and security, as well as what to do when it ‘just won’t work’. Finally, the presentation will examine the future of these technologies.

Mark Charlton, University of Warwick

Mark Charlton has been working in networking at the University of Warwick since 1993. In previous lives he has been a programmer, a hardware engineer and a software engineer. In spare moments he savours real ale and plays fiddle in a ceilidh band. He will not be playing at Networkshop!

ABSTRACT

Making Network Resilience Resilient

There are many techniques for providing network resilience, such as spanning tree protocol (STP) and virtual router redundancy protocol (VRRP). Correctly implemented, they aim to remove single points of failure at the expense of relatively minor increases in network complexity.

However, a hardware or software failure in a network device could have a direct impact on a resilience protocol, effectively making the protocol itself a single point of failure. This paper presents a number of these failure modes, and asks the question: “Can anything be done to mitigate them?”

Tim Chown, University of Southampton**BIOGRAPHY**

Dr Tim Chown is a lecturer, researcher and systems manager within the School of Electronics and Computer Science (ECS) at the University of Southampton. He has been in the 'pro' IPv6 camp for many years, having taken part in large-scale piloting projects (e.g. 6NET) and also managed the deployment of IPv6 dual-stack in his own School's network.

ABSTRACT

IPv6 / IPv4

As we enter 2010, only 8% of the global IPv4 address space remains available for allocation from the Regional Registries. While IPv4 addresses continue to be consumed, adoption of IPv6 by JANET-connected HE and FE sites remains extremely low, even though the JANET core and a number of RNO networks support IPv6 natively. Why have campuses not adopted IPv6 yet? Are you concerned about the IPv4 address scenario, or relaxed knowing your site has enough addresses for the foreseeable future? Do you think you should do more to prepare for IPv6? Would you be brave enough to ask your IT director for the go-ahead to plan to make your whole campus dual-stack IPv4/IPv6 this summer? This debate will consider the present state and issues with IPv6 from a positive and negative point of view and let you decide your own verdict.

This debate will be hosted by two speakers who will present material 'for' and 'against' IPv6, with the possibility of guest panellists also joining the debate.

Alexander Clouter, SOAS, University of London**BIOGRAPHY**

For the past five years Alex has been working as a network monkey for the School of Oriental and African Studies and prior to that with a small local ISP for three years. His interests range over DNS, LDAP and RADIUS through to packet pushing, sniffing and sanitising; anything that does not involve the software that runs on what nowadays passes for a workstation.

When coding, most of his work involves hacking away in Perl but he has been known to have fun with ARM and MIPS embedded board development whilst tinkering with the Linux kernel.

ABSTRACT

DNS Servers, The More The Merrier

There was a time when only two DNS servers were needed to run an organisation, handling both authoritative and recursive services. Nowadays DNS has grown to hold information regarding DNS blacklisting and malware signatures through to SSH host keys and service discovery data; such a core part of the network it has grown to the point that any outage is now fatal for its duration.

Although daunting at first, a split-split DNS with a hidden primary adds lots of reliability whilst giving you the flexibility to add diversity in the choice of DNS servers you can use. Freed from using a single DNS server product it now is easier to also add malware/botnet protection to your network and join the DNSSEC bandwagon.

Trevor Collins, The Open University**BIOGRAPHY**

Trevor Collins is a Research Fellow at The Open University's Knowledge Media Institute. His research interests lie in exploring ways that technologies can be applied to support learning. He leads the Enabling Remote Activity (ERA) Project where a Portable Wireless Local Area Network (Portable WLAN) has been developed for use on fieldwork courses to improve access to difficult to reach locations. The portable network delivers data, video and voice communication between students and tutors on the network using standard WiFi devices, such as netbooks and iPhones. He has a PhD in Artificial Intelligence and an MSc in Human-Computer Systems.

ABSTRACT

Portable WLANs – Networking for off-the-grid locations

The Portable WLAN Programme is exploring ways in which Wireless Local Area Networks (WLANs) could be used to deliver network access to remote locations. Batteries or alternate power sources can power 802.11-based WiFi access points to create a temporary network for sharing data locally (such as photos, video or even audio). When connected to a Wide Area Network (WAN) the Portable WLAN can share the Internet connection to enable any of the

remote users to browse the web. Furthermore, when a web server is included in the Portable WLAN, it can serve content from the local network to anyone on the Internet. These three forms of network support – local network communication, Internet clients and Internet servers – are being explored in the Portable WLAN trials.

Examples will be drawn from the following contributors:

- **Leeds Metropolitan University:** Investigating mobile classroom support for outdoor courses, with trials in the Lake District and Bradford.
- **Lancaster University:** Developing support for Mountain Rescue teams, including robust custom-built network points with WiFi, 3G and Satellite connectivity.
- **Orkney College:** Supporting archaeology and geophysics fieldwork on the Orkney Islands using a satellite Internet connection combined with a local WiFi network.
- **The Open University:** Using a Portable WLAN to improve access to fieldwork locations for Earth and Environmental Science students on OU residential fieldwork courses. And, exploring the use of ADSL, 3G and satellite backhaul connections to access remote field locations in order to introduce students to fieldwork.
- **University of Strathclyde & Northumberland College:** Exploring the use of mobile learning centres equipped with student computers, course resources, and an Internet connection for delivering vocational training courses in remote areas of Northumberland.

The Portable WLANs presentation will discuss the forms of network configurations being explored and the findings of the trials to date.

Andrew Cormack, JANET(UK)**BIOGRAPHY**

Andrew Cormack is JANET(UK)'s Chief Regulatory Adviser, responsible for keeping the company and its customers informed about the regulatory, policy and security issues of running computer networks and services. He also works with other Research Networks on developing policies for new services, and with other organisations and governments to ensure that network regulation is both practical and effective. He joined UKERNA in 1999 as Head of CERT and previously worked for Cardiff University and the NERC.

ABSTRACT

Networks and the Law: 2010

Despite the common perception that the Internet is lawless, many areas of network operations are regulated by UK and European law. Fortunately these legal requirements are generally the same as good network operations practice, so the law is often a helpful guide and only occasionally a (necessary) constraint. The talk will provide a brief summary of the issues together with an update on new and developing legislation.

ABSTRACT

Network Research, Privacy and the Law

Research on the production JANET network can be very useful in understanding how network traffic behaves, so can improve both current and future services. But it must also respect the privacy of users of the network and comply with the law. This talk will discuss how JANET's Research Data Policy achieves these requirements and give some examples of how useful network research can be conducted without harming privacy.

Alec Edworthy, Loughborough University

BIOGRAPHY

Alec Edworthy has been a member of Loughborough University IT Services' Network & Security team since 2006. During this time he has led the deployment of a number of technologies including securing the wired networking in PC labs across campus using 802.IX and providing a managed Wake-on-LAN solution working alongside other networking technologies. Alec is the manager of the University's VPN service and helped to re-write the management systems behind the University's highly successful student residential network system, Hallnet. Since the original release of iPhone OS 2.0, Alec has managed the University's web-based automatic configuration utility, providing staff and students with a simple mechanism to configure wireless, e-mail and VPN services on their iPhones and iPod Touches.

Prior to working for IT Services, Alec worked for British Gymnastics, designing, implementing and supporting their web-based World Class Gymnastics Database.

ABSTRACT

Waking up securely: a story of Wake-on-LAN and 802.IX

Although the deployment of wired 802.IX security to all PC labs across the Loughborough University campus is not complete, the PC Labs and Networks and Security teams have already started looking for another challenge and selected Wake-on-LAN as the next target. Wake-on-LAN has a number of uses in a PC lab environment, from aiding in the speedy deployment of software packages, updates and security patches out of hours, to ensuring that a room of PCs are all booted up and ready to use in time for an important lecture. Although there are a number of commercial software packages out there which can help IT staff manage the waking of PCs, many of these packages suffer from some sort of shortcoming, be it that they are not designed with a large-scale, multi VLAN, deployment in mind, have a reliance on a particular hardware/BIOS feature set or that they cannot cope with an 802.IX environment where PCs exist on one network when in use and another when they are turned off. These problems amongst others have driven us toward creating our own in-house solution once again.

In this presentation I will explain some of the benefits which being able to wake up PCs at arbitrary times can bring, why existing management tools proved insufficient for our needs and how we developed our own management system to provide a scalable solution to this problem which goes hand-in-hand with our continuing use of 802.IX in PC labs.

Ade Fewings, Centre for Advanced Software Technology (C.A.S.T.) Limited

BIOGRAPHY

Ade Fewings is Visualisation Systems Engineer at the Centre for Advanced Software Technology (C.A.S.T.) Limited at Technium C.A.S.T. in Bangor. C.A.S.T. Limited is a Bangor University subsidiary specialising in novel and high-technology projects in visualisation, and in the support and assistance of technology-led startup companies. Ade received his PhD in Distributed Computer Graphics from the University of Wales, Bangor in 2006 before joining C.A.S.T. to work initially on the setup and use of the world's first completed Fakespace PowerWall 4K. Since that time, Ade has gone on to work in the support and management of other visualisation systems and technologies. He also works now in the design and development of a number of software projects and takes a technical role in the strategic development and utilisation of new technologies and capabilities.

ABSTRACT

The View in Ultra High Definition

An introduction to ultra high-definition (UHD) ideas from the perspectives of motion video and real-time graphics. The presentation will include coverage of technologies and standards associated with UHD, a look at work recently presented at the international CineGrid 2009 workshop, and discussion on 3 years of experience with the world's first 4K PowerWall.

Matthew Gast, Trapeze Networks

BIOGRAPHY

Matthew Gast is Chief Strategist in the Office of the CTO at Trapeze Networks, where he leads the development of open wireless network standards and their application to the Trapeze architecture. He is chair of IEEE 802.11 Task Group M, where he leads the revision of the 802.11 standard. He also serves as Secretary of 802.11 Task Group U on interworking with external networks.

As chair of the Wi-Fi Alliance's Wireless Network Management marketing task group, he is leading the investigation of certification requirements for power saving, performance optimization, and location and timing services. Matthew also chairs the Security Technical task group, which is extending Wi-Fi Protected Access (WPA) certification to incorporate newly-developed security mechanisms so that it remains the strongest form of protection available for Wi-Fi networking.

In 2007, Matthew was a founder of the OpenSEA Alliance, a group organized to support the development of open-source network security solutions. He currently serves on the engineering steering committee, the organization's board of directors, and as its corporate secretary.

Matthew's most recent book, *802.11 Wireless Networks: The Definitive Guide* (O'Reilly Media), now in its second edition, is the top selling reference work in the field and has been translated into six languages.

ABSTRACT

Wireless Standards/Developments

Wireless networking based on 802.11 standards has been successful because it enables mobile user populations to access shared resources scattered throughout networks. Students and faculty members now expect to have fast, reliable and secure uninterrupted access to these resources. Fully unlocking the potential of location-independent computing requires continuing development of protocols that will improve power management, enable new applications and increase speed even further. This presentation will describe developments in wireless network standardization over the past year to achieve these goals.

Hugh Griffiths, oMbiel

BIOGRAPHY

Hugh Griffiths founded oMbiel and has worked in the software industry for over twenty years and was co-founder of Griffiths Waite, an award winning Systems Integrator. Hugh provides advice and guidance to customers implementing SOA and has direct responsibility for campusM product development and architecture.

ABSTRACT

campusM Mobile Architecture

campusM developed by oMbiel has become the leading mobile application for UK universities providing an integrated suite of university services on the iPhone, iPod touch and hundreds of other smart phone devices. This presentation looks under the bonnet and discover how Service-Oriented Architecture, SaaS and Cloud Computing form the foundation of the campusM architecture.

Peter Harrison, South Staffordshire College

BIOGRAPHY

Peter Harrison has worked in the Further Education sector for 25 years with experience in teaching and IT support. After a period teaching sciences, Peter changed his specialism to computing and has taught on a variety of courses including programming, computer hardware, robotics and networking. Assuming the role of IT Manager when it became apparent nobody else was that foolish, he has overseen the introduction and development of a wide range of technologies from pre-internet to mobile computing. The merger that resulted in South Staffordshire College has presented new challenges in both technology and time management. By contrast, herding cats would be easy.

ABSTRACT

Herding Cats in South Staffordshire

At the beginning of 2009, three colleges in South Staffordshire merged to form South Staffordshire College – now one of the 25 largest colleges in the country.

This paper will describe how a new IT Infrastructure was engineered to cope with the merger.

Geography, circuit availability, shared local infrastructure, working practices, domains, email, MIS, finance, telephones... All these cats needed to be herded together to form the new college.

Here we describe how some of these problems were overcome by the forging of close working relationships between NNW, Staffordshire University, some key suppliers and the College to deliver a new, resilient network infrastructure to 1,500 staff and 26,000 students on four campuses.

James Hooper, University of Bristol

BIOGRAPHY

James joined the Networking team at the University of Bristol in 2001. He has an eclectic selection of responsibilities including Bristol's wireless and VPN services.

James' primary focus is authenticated network access, particularly providing user friendly connectivity for mobile users using personally owned devices.

ABSTRACT

Challenges for wide scale 802.1x deployment

Integrating 802.1X into an organisation presents a variety of challenges. This presentation discusses the planning, implementation and use of 802.1X on a university wide scale. It details the problems encountered, both technical and user-experience related, and possible solutions.

The discussion will primarily focus on 802.1X in a wireless context, although the issues are often common between the connection media.

Simon Hogg, Oxford Brooks University**BIOGRAPHY**

Simon Hogg has worked at Oxford Brookes for 20 years and has seen a few changes from the old Polytechnic days. Started out in computer operations and is now an Academic Computing Officer which encompasses day to day support for academic staff and research students. Simon is also the postmaster, SPSS site co-ordinator and is involved in other projects as required eg anti-virus software provision.

ABSTRACT

Outsourcing mail and associated services - do we gain or lose?

Oxford Brookes has decided to use Google, primarily for mail and calendaring. This has come about after senior management required that the University provides an integrated solution, rather than a traditional open source solution for such services, usually found in the community.

Josh Howlett, JANET(UK)**BIOGRAPHY**

Josh Howlett is JANET(UK)'s Middleware Architect. He is also the Activity Leader of the GEANT3 'End-User Services in a Federated Environment' activity, responsible for the development and operation of the eduPKI, eduroam and eduGAIN services.

He participates within a variety of other Research & Education middleware activities, including TERENA's Mobility and EMC2 task-forces, TERENA ECAM and Internet2 MACE, and also contributes towards the development of technical standards within OASIS and the Trusted Computing Group.

ABSTRACT

Access Management Futures

This talk will consider recent developments in access management, focusing on future possible directions for JANET(UK)'s federated services.

Michael Jorgenson, Cardiff University**BIOGRAPHY**

Michael Jorgenson has been a member of staff in the Information Services division at Cardiff University since 2002, having previously studied as an undergraduate and postgraduate at Cardiff University, in the schools of Computer Science and Engineering. Michael worked for a year with Cogent Defence & Security Networks, (formerly owned by Nortel Networks, now part of EADS Defence & Security) before returning to Cardiff University.

ABSTRACT

Socket: IPAM, Network Management & Visualisation with Google Earth

The Network Services Team at Cardiff University have developed a network configuration management and computer registration system called Socket. This presentation will provide a brief introduction to Socket, with screenshots and live demonstrations. The key features are:

- Built entirely on open-source software, based on Gentoo Gnu/Linux with PostgreSQL, Apache, Net-SNMP, Open-LDAP and GraphViz
 - LDAP Authentication (Shibboleth authentication planned for the future)
 - DNS Zone file generation for ISC Bind version 9
 - DHCP configuration file generation for SC DHCP server version 3
 - Static IP address reservation and allocation, coupled with DHCP pools, providing stability and mobility
 - VLAN and port speed changes using web interface, delegated control to staff within schools
 - Network infrastructure configuration tracked and recorded in database
 - Wired (and prototype wireless) location awareness information and reports
 - Integration with: Bradford Campus Manager, Statseeker Network Infrastructure Monitor (v2 & v3) and InMon Traffic Sentinel
 - Interactive SVG network diagrams
 - Visualisation of network information using Google Earth
-

Kevin Koster, Cloudpath Networks

BIOGRAPHY

Kevin Koster is the founder and principal of Cloudpath Networks. He has ten years of development experience in wireless security and 802.IX technologies. He has also been a contributing member of the Interop Labs and a PMC member for the OpenSEA Open IX project.

ABSTRACT

Understanding Server Certificate Validation & 802.IX Update

Server certificate validation is a significant aspect of the 802.IX security model. Unfortunately, it often goes unused or is insufficiently used, leaving machines susceptible to rogue network threats. In this session, we will discuss how server certificate validation works, the types of security exposure it reduces, and why it is critical for both university and eduroam SSIDs. We will also discuss how operating systems implement server certificate validation and the appropriate configuration for each.

We will conclude the session with an update on the 802.IX world, including 802.IX-related features in new operating systems and phones and the status of OpenSEA.

Tim Kidd, JANET(UK)**BIOGRAPHY**

Tim is the JANET(UK) Head of Operations, with responsibilities for operational services relating to the JANET backbone, for various value added services and for computer emergency response through the JANET CSIRT.

ABSTRACT

JANET Update

This presentation will provide a review of the JANET Operations and Development Programmes for the past year and an insight into what's to come in the year ahead.

John A. Linn, University of Aberdeen;**BIOGRAPHY**

Dr. John Linn is the Network Development Manager, University of Aberdeen, and has been following the progress of IPv6 for many years and, in particular, the deployment of IPv6 in the Regional Networks - AbMAN supports IPv6 unicast and multicast. He has significant concerns about the deployability of IPv6 in its current state as the basis for the IT services in a campus and deploying soon due to the current pressures on university resources.

ABSTRACT

IPv6 / IPv4

As we enter 2010, only 8% of the global IPv4 address space remains available for allocation from the Regional Registries. While IPv4 addresses continue to be consumed, adoption of IPv6 by JANET-connected HE and FE sites remains extremely low, even though the JANET core and a number of RNO networks support IPv6 natively. Why have campuses not adopted IPv6 yet? Are you concerned about the IPv4 address scenario, or relaxed knowing your site has enough addresses for the foreseeable future? Do you think you should do more to prepare for IPv6? Would you be brave enough to ask your IT director for the go-ahead to plan to make your whole campus dual-

stack IPv4/IPv6 this summer? This debate will consider the present state and issues with IPv6 from a positive and negative point of view and let you decide your own verdict.

This debate will be hosted by two speakers who will present material 'for' and 'against' IPv6, with the possibility of guest panellists also joining the debate.

Cricket Liu, Infoblox

BIOGRAPHY

Cricket Liu is an authority on the Domain Name System and the co-author of all of O'Reilly & Associates' Nutshell Handbooks on DNS, including the classic DNS and BIND. Cricket helps guide the development of Infoblox's product strategy and service offerings, and serves as a liaison between Infoblox and the technical community. He worked for Hewlett-Packard for nearly ten years, where he ran hp.com, one of the largest corporate domains in the world, and helped found HP's Internet consulting business. Cricket later co-founded his own Internet consulting and training company, Acme Byte & Wire. After Network Solutions acquired Acme Byte & Wire, Cricket became Director of DNS Product Management.

ABSTRACT

DNS Security

Threats to DNS Security affect all network-based applications putting e-mail, web applications, e-Commerce, etc. at risk. During his talk Cricket will cover:

- Cache poisoning and what it means to enterprises worldwide
 - DNS infrastructure best practices and security
 - Recommendations for protective countermeasures against this exploit.
-

Warren Matthews, JANET(UK)**BIOGRAPHY**

Warren Matthews is a research support coordinator for JANET. His interests focus on the use of advanced networking and applications to enable education and research. Since obtaining his PhD in High Energy Physics, Warren has been active in numerous areas of network support and research including network performance measurement and facilitating the use of networks for research and outreach. Before joining JANET, Warren worked at the Georgia Institute of Technology in Atlanta. He helped support the campus network and the Southern Crossroads gigapop which provides connectivity to Internet2 and NLR for most of the universities in the south-eastern United States. He served as chair of the Internet2 Special Interest Group for Emerging NRENs between 2005 and 2008.

ABSTRACT*Control Plane Developments*

This talk will review recent developments in control plane technology and highlight the deployments of dynamic provisioning in research and education (R&E) networks. The talk is targeted at members of the JANET community who expect to make use of these technologies in their own network or campus, or may just want to keep up to date with developments.

Derek McAuley, University of Nottingham**BIOGRAPHY**

Derek McAuley is Professor of Digital Economy in the School of Computer Science and Director of Horizon at the University of Nottingham, and Affiliated Lecturer at the University of Cambridge Computer Laboratory. After a PhD and lectureship at Cambridge he moved to a chair in the Department of Computer Science at the University of Glasgow. He returned to Cambridge in July 1997 to help found the Cambridge Microsoft Research facility, moving on to found the Intel lablet in Cambridge in July 2002. A year working in Oregon for Intel from August 2005 until August 2006 was an interesting cultural diversion and improved the skiing enormously, but alas during this sojourn the Cambridge lablet was shut. Before joining Nottingham he enjoyed the cut and thrust of two startups, XenSource (now Citrix) and Netronome.

His research interests include ubiquitous computing, computer architecture, networking, distributed systems and operating systems.

He is a Fellow of the British Computer Society and member of the UKCRC, a computing research expert panel of the IET and BCS.

ABSTRACT

An Infrastructure Challenges in the Digital Economy

New services based on an individual's contextual footprint derived from implicit and explicit user actions in both the physical and virtual worlds have the potential to revolutionise the Digital Economy.

At the heart of this is the requirement to provide users with a human comprehensible means to control access to, and use of, their personal data, based on a technical means that has provable security properties. However, the current path being taken in the online world is unsustainable as copies of such data come into existence all over the planet, in environments of unknown security “hygiene” – the user loses track of where data is held and what is being done with it. While the rights under law in the EU of the user are clear(ish), the ability for the user to manage access, and importantly to revoke it, in this model is becoming prohibitively difficult. We need to redress this trend and put the user firmly back in control.

These are the voyages of the Horizon Digital Economy Research Institute....

Klaus Mochalski, ipoque

BIOGRAPHY

Klaus Mochalski is CEO of ipoque. He has conducted research in the area of network measurements for five years working on international projects in the USA, Germany and New Zealand. Prior to his research he was working as an IT consultant planning and deploying large-scale network installations.

ABSTRACT

Deep Packet Inspection: Technology, Applications and Net Neutrality

Deep packet inspection has been subject to controversial debates about network neutrality and online privacy. But DPI is a neutral technology. It depends on the application that utilizes DPI whether and how it will affect the Internet and our society. This presentation will focus on Internet bandwidth management based on DPI. After an explanation of what DPI is – and what it is not – we will straighten some myths and untruths. Future discussions, particularly in the area of bandwidth management, should not focus on DPI as a technology but on its specific applications. To facilitate these discussions, we will propose a simple system of categories that classify different Internet traffic management schemes according to their impact on net neutrality, market competition and online privacy.

Peter North, University of Coventry**BIOGRAPHY**

Peter is a network engineer currently working for Coventry University in the network development team. He has 4 years experience in designing, implementing and troubleshooting networks based on Cisco technology. He has been working at Coventry University for just over 1 year and has made a significant contribution to the design and development of the network. He currently holds CCNP accreditation.

Mark O'Leary, JANET(UK)**BIOGRAPHY**

Mark O'Leary is the network access technical specialist for JANET(UK). He is principally known in the community for his activities in the wireless sphere, but covers diverse activities from last mile connectivity to data visualisation. Prior to joining JANET(UK) he worked in the network team for the University of Manchester and prior to that his academic career was in molecular biology. He is currently pushing location-aware wireless services through group leadership within the European mobility taskforce, TF-mobility.

ABSTRACT*JANET Network Access*

2009 has been a busy year in the Network Access arena. This session will review the recent themes and achievements in this area, and describe the future strategy for this aspect of JANET(UK)'s network development work. Topics covered will include the broad theme of mobile broadband, for which JANET(UK) has just completed a major survey exercise, and the relatively unknown technology IF-MAP.

David Parish, Loughborough University**BIOGRAPHY**

Prof. David Parish is Professor of Communication Networks in the Department of Electronic and Electrical Engineering at Loughborough University, and currently Associate Dean (Research) for the Faculty of Engineering. He has been active in communication networks research for over 26 years and has led a recent EPSRC funded project into the performance monitoring of the JANET(UK) Lightpath high-performance communication infrastructure. He has also led projects which have designed and installed traffic monitoring equipment into the BT SMDS network and the VirginMedia (NTL) ISP network, both of which supported commercial customers.

ABSTRACT*Network Measurement Reuse*

Communication network measurements are technically challenging and costly to collect, store and process for high data-rate networks. At present, such measurements are not fully utilised even when they are collected. Traditionally, they have been used to assist in understanding the performance of the network, in identifying the need for upgrades and for limited diagnostic activities. Where measurements are used for other purposes, these are usually collected separately. This is very inefficient and, at a time of great pressure for efficiency in network operations, should be addressed. Networks are also under pressure from malicious activity and need to become more energy efficient. Measurements could play a key role in both of these areas.

The presentation will consider how communication network measurements could be used to serve multiple purposes. Some examples from the speaker's research will be given where measurements have been used to aid diagnostics and identify abuse. Suggestions for extending this to energy saving will also be made.

Periklis Petropoulos, University of Southampton**BIOGRAPHY**

Dr Periklis Petropoulos was born in Patras, Greece. He graduated from the Department of Electrical Engineering and Information Technology, University of Patras, Greece in 1995. He received the MSc degree in Communications Engineering from UMIST, UK in 1996 and the PhD degree in Optical Telecommunications from the Optoelectronics Research Centre (ORC), University of Southampton, UK in 2000.

Dr Petropoulos is currently appointed a Reader at the ORC. His particular areas of interests and expertise lie in the fields of optical communications and nonlinear fibre technology. Within the Optical Fibre Communications group at the ORC he is working on such areas as all-optical processing and switching in optical fibres; pulse manipulation for optical communications using fibre Bragg gratings, including applications in optical correlation systems for the implementation of optical code-division multiple access and optical packet switched systems; silica and compound glass holey fibres and their nonlinear applications; and fibre lasers. Dr Petropoulos has published more than 230 papers in technical journals and conferences and holds 4 patents. He is a member of the Optical Society of America.

ABSTRACT

An overview of the main technologies behind optical communications

The optical fibre has often been viewed as a medium of near-infinite bandwidth. This, in conjunction with its incredibly low propagation loss, has established the fibre as the ideal transmission medium, especially for long-distance communications. However, the explosive growth of internet traffic over recent years has pushed the limits of existing communication networks, and is posing serious questions on how much information can actually be carried in an optical fibre and the restrictions of the current methods and technologies we use to transmit information.

This talk will outline some of the technologies that have been central in the evolution of optical fibre communications over the years and have eventually revolutionised the way we communicate. A brief reference will be made to some of the historical developments in the field, and their transformational effects. In a similar fashion, the talk will review the challenges faced ahead and will suggest some areas of research which may produce important developments in the near future.

Dave Reeve, Canterbury Christ Church University**BIOGRAPHY**

Dave Reeve has an varied background in a number of telecommunications areas; from performance engineering for the Atlas project at CERN, to working on the US Military Future Combat System. More recently he has provided consultancy to BT and Vodafone on the performance of 3G networks. He now works as a systems analyst at Canterbury Christ Church University. As an open source advocate and contributor he is at his happiest with some source code and a cup of coffee.

ABSTRACT

Asterisk for the Enterprise

Asterisk is a well known open source telephony toolkit, but does it provide sufficient functionality for the enterprise? In this talk we will cover some of features of Asterisk, including its support for Distributed Universal Number Discovery (DUNDi) and Asterisk's Real-time (configuration) Architecture. This will be presented in the context of the practical experience gained during the deployment of Canterbury Christ Church University's pilot VoIP solution.

David J. Richardson, University of Southampton**BIOGRAPHY**

David J. Richardson holds a personal Chair in Photonics at the University of Southampton and is Deputy Director of the Optoelectronics Research Centre (ORC) where he is responsible for Optical Fibre Device and Systems research. His current interests include amongst others: optical fibre communications, high power fibre lasers and nonlinear fibre optics. He has published more than 700 conference and journal papers in his time at the ORC, and produced over 20 patents. He is a frequent invited speaker at the leading international optics conferences and is an active member of both the national and international optics communities. Prof. Richardson, a founder of SPI Lasers Ltd., was made a Fellow of the Optical Society of America in 2005, a Fellow of the IET in 2008 and most recently a Fellow of the Royal Academy of Engineering in 2009.

ABSTRACT

The World Wide Web of Glass: The Past, Present and Future of Fibre Optics

Using sun and reflectors, communicating with light goes back thousands of years. But with the advent of lasers and optical fibres in the latter half of the past century a revolution occurred in the telecommunications industry. A single fibre made of a flexible strand of ultra-pure silica, with a width not much greater than that of a human hair, has the capacity to transmit more than 250 million simultaneous telephone conversations, or to provide 5 million broadband internet connections. Moreover it can do this over transoceanic distances. This explosion in data transfer capacity, speed and system reach has changed the world through the internet and in order to satisfy our ever increasing communications needs a cloak of optical fibres now covers the globe.

This development of today's fibre networks has only been possible due to a number of key scientific breakthroughs, as well as huge and sustained investment in optical fibre telecommunications technology over the years. Major advances have been required in manufacturing processes, as well as in both component and system concepts. For example, the invention of the optical fibre amplifier at Southampton University in the mid-1980s eliminated signal attenuation as a fundamental limit to the distance and speed that data can be sent through optical fibre cables. Prior to this, signals had to be converted from the optical to the electronic domain every few tens of kilometres and this imposed a huge bottleneck to system capacity. Until recently, it had been widely assumed that the transmission bandwidth available from optical fibres as developed in the mid-70s was effectively infinite relative to our needs. However, due to increased internet uptake and the emergence of new and ever more bandwidth hungry applications, there is a growing realization that this is no longer the case. Indeed, without further innovations, the data carrying capacity of our current fibre networks could be exhausted within the next 5-10 years.

In this talk I will review the historic development of optical fibre technology and describe the current state-of-the-art in terms of transmission performance. I will then describe possible ways forward to avoid the looming bandwidth-crunch ahead. Time permitting I will also describe some of the other emerging applications of fibre technology which range from demonstrating nuclear fusion, use in cutting and welding steel and discovering new oil reserves.

Mike Richardson, University of Manchester

BIOGRAPHY

Mike Richardson has been a Senior Network Engineer for the University of Manchester for 5 years. Previously, he was an Email Administrator at the University for 5 years. Before that he was a junior dogsbody for the University. A degree, Masters and uncompleted PhD thesis at the same institution means that in one form or other he has been at the University for 22 of his 40 years. His involuntarily chosen fields are wireless, authentication, system administration, networking and software development.

In his spare time he relaxes by flying model helicopters and geocaching.

ABSTRACT

JANET Roaming Deployment For Networkshop

This talk will cover the activities which have taken place at the University of Manchester to deploy a suitable JANET Roaming implementation at the location where NWS will be hosted this year. The systems and technologies used will be explained and a demonstration may be provided if time allows. The University has recently started replacing its autonomous Cisco wireless system with a centralised Aruba one. The campus JANET Roaming deployment is tied with these activities.

David Round, Bangor University

BIOGRAPHY

Dr David Round has been a member of Bangor University's networks team for the past five years, and the servers team for eight years previous to that. During his time in the networks team he has helped develop and maintain the campus network, halls of residence network, monitoring systems, firewall and wireless solution. Currently he is working on Bangor University's second data centre project. David has a doctorate and masters degree, both from Bangor University.

ABSTRACT

Server Room / Data Centre Efficiency Savings

Do you want to halve the running costs of your data centre and earn some green credentials while you are at it? In their report to the U.S. Congress, the US EPA estimates that in 2006, the typical enterprise data centre had a PUE of 2.0 or higher, which means less than half of the energy consumed was used to power the IT equipment. SUN have demonstrated that a PUE of 1.05 is achievable. For an IT load of 100kW this represents a saving of £100,000 per annum. The savings do not stop there either.

Jeremy Sharp, JANET(UK)**BIOGRAPHY**

Jeremy is Head of the Strategic Technologies division of JANET(UK). The role of Strategic Technologies is to provide a view of how network technologies and applications will shape the future of JANET. In particular, it is responsible for the development and implementation of initiatives which lead to the development of specific new JANET services. Jeremy is part of the senior management team that collectively manage the divisional structure of the company.

ABSTRACT*JANET Update*

This presentation will provide a review of the JANET Operations and Development Programmes for the past year and an insight into what's to come in the year ahead.

Thomas Sims, Verizon Business**BIOGRAPHY**

Thomas Sims joined Verizon in 1999 as a graduate engineer, working on the expansion and roll-out of the European Transmission network. In 2003 he moved to the Transmission Design team where he worked on the optimised design and modelling of SDH and optical access networks.

Since 2006 Thomas has been providing network technology and architecture analysis of Verizon's European Access network. His current role is in investigating deployment strategies for next generation packet and optical based transport and he manages a group of 4 transmission design engineers.

He graduated from the University of Durham in 1999 with a Masters in Information and Communication Engineering, and is working towards being a Chartered Engineer (MIET).

ABSTRACT

Migrating to a Packet Optical Network

As telecom carriers plot their network migration strategies to support the rapid growth of IP and Ethernet services – while simultaneously retaining the ability to deliver high margin TDM-based services over SONET/SDH networks – Packet Optical Transport has become one of the hottest concepts in the telecom networking market. Because current Ethernet over SONET/SDH schemes cannot cost-effectively scale to meet future demands, operators must find a way to phase out TDM-based networks gracefully in favour of networks that can transport packet-based traffic over optical wavelengths in its native format.

Nick Skelton, University of Bristol

BIOGRAPHY

Nick is responsible for 'anywhere, anytime' IT at the University of Bristol.

Nick studied Chemistry at the University of Bristol before discovering that you can graduate but never leave. He founded Bristol's ResNet service and has since spent 10 years managing various IT services for students and staff. His areas of interest include mobility, cloud computing and the consumerisation of IT. He is a firm believer that people are more important than technology, and that IT services succeed or fail due to social effects.

His interests include mountain biking and performing improv comedy. He shares his thoughts on people and technology at ideasandohdears.blogspot.com

ABSTRACT

Universities in a networked world, or how to stop worrying and learn to love the Internet

JANET and the universities have built fast, reliable Internet access for every student and staff member across the UK. This achievement has become a challenge to our IT departments, if not universities themselves.

Once upon a time the IT department was in control. Now it is easily bypassed. A wealth of alternatives are available, over the network. Anyone can get free webmail from Hotmail. File storage and processor cycles cost just a few cents a GB from Amazon. Even the network itself can be bypassed with a 3G dongle. Why go to a lecture on campus, when talks from the worlds leading thinkers are available for free at TED.com?

So what is left for the poor IT department or network provider? There is a huge opportunity for us, but we must understand how to work with the network, not against it. We need to hook into larger networks and build services on top of them, rather than reinvent wheels or hide content behind walled gardens. Nick will present some rules of thumb to help us live in this brave new networked world.

Duncan Wall, UKBroadband Ltd

BIOGRAPHY

Presently Duncan is VP Business Development at UKBroadband Ltd. He has more than 14 years experience in the Telecoms & IT industries having worked for the likes of 3Com, Cisco, and Alcatel. Duncan was a co-founder of UKBroadband before its acquisition by PCCW, the incumbent telecommunications operator in Hong Kong.

Educated at Plymouth University, Duncan achieved a BEng & MEng in Electronic, Electrical, & Communications Engineering.

ABSTRACT

WiMAX vs. LTE

An industry inside update on the merits of WiMAX & LTE, and their battle to be crowned “the” 4G Technology of choice!

DELEGATE LOUNGE - NETWORKSHOP 38

Why not take advantage of the Delegate Lounge at this years Networkshop.....

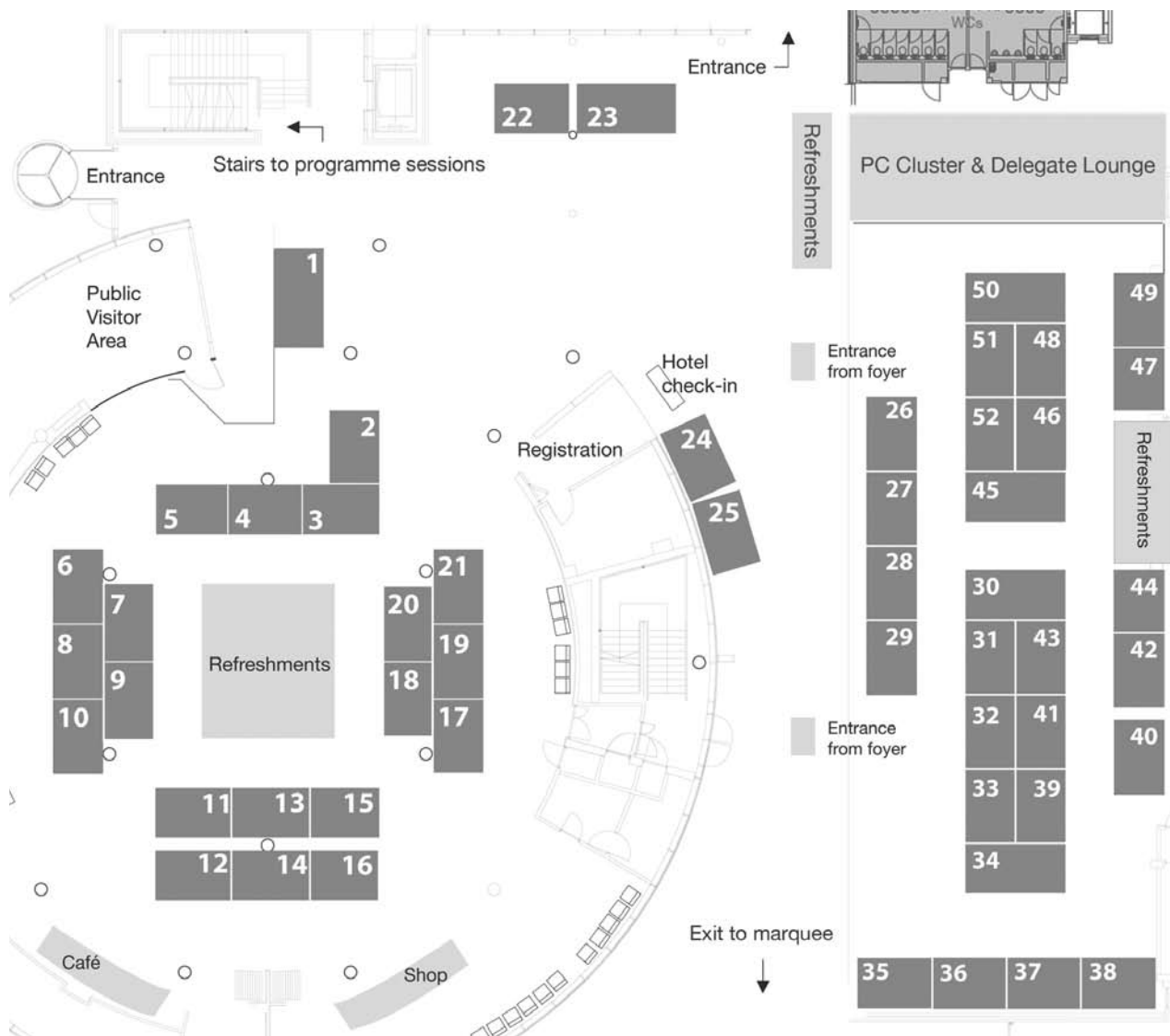
- Relax
- Log on to the computers provided
- Plug in your laptop
- Network with colleagues
- Plenty of power sockets
- Printer available
- Access Networkshop Online
- Complete the online feedback form

The facility is open to all delegates and can be found in the restaurant exhibiton area. A site map is available on the next page.

We look forward to seeing you there!



EXHIBITION PLAN



NETWORKSHOP 38 - EXHIBITING COMPANIES

Once again our Exhibition is very well supported by a variety of companies – welcome back to old friends and a special welcome to companies exhibiting for the first time. Delegates will be urged to make full use of refreshment and meal breaks to visit the Exhibition, located in the foyer (stands 1-25) and Restaurant (stands 26-52), and also to join exhibitors for a drinks reception on Tuesday evening.

EXHIBITORS	STAND NO.	EXHIBITORS	STAND NO.	EXHIBITORS	STAND NO.
3M UK	41	Force10 Networks	37	NetFort Technologies Ltd	2
Allot Communications	18	ForeScout Technologies/ Axial Systems	12	Nexans UK Ltd	4
Arista Networks/ Fujin Systems	36	Fortinet	39	Norman Data	1
Aruba Networks	11	Geo Networks	40	Out of Band Solutions Ltd	26
Barracuda Networks	44	H2O Networks	23	Pervasive Networks	43
Brocade Communications	6	HellermannTyton Data Ltd	48	QoLcom Ltd/Trapeze Networks	19
BT iNet	13	HP ProCurve Networking	45	SCD Group Ltd	32
Calyx Group	21	Infoblox	3	SonicWALL UK	35
Ciena	30	InTechnology	28	Symantec	10
Cisco	14	ipoque GmbH	42	Synetix Solutions	34
Cloudpath Networks	24	IP Performance	5	THUS Ltd	46
Data Integration	50	Juniper Networks	22	Triplecomm Ltd	47
Direct Visual / TANDBERG	49	Khipu Networks Ltd	15	Tuscany Networks	20
ESISS	38	Lancope, Inc.	8	Verizon Business	27
Ensign Communications	9	Mayflex	52	Virgin Media Business	33
Enterasys	16	Molex Premise Networks	17	Xirrus	29
Exterity	25	MRV Communications	7		
Extreme Networks	51	Mutiny Ltd	31		

EXHIBITOR PROFILES

3M NETWORK COMMUNICATIONS SOLUTIONS

STAND No. 41

www.3m.com/uk

CONTACT	Rachel Wyatt
E-MAIL	Rewyatt@mmm.com / sfarrell@mmm.com
TELEPHONE	01344 857821/857822

3M – the diversified technology company – provides end to end structured cabling systems known for their quick, simple and reliable termination processes giving high yield, cost effectiveness and consistency in technical performance.

Drawing on 50 years of innovation developed in 3M laboratories and experiences around the world, 3M pride themselves on dedication to the customer and their needs.

New to 2010 and to debut at Networkshop 38 will be the 3M Volition Intelligent Management System: a physical layer network management system that provides real-time information on the status of connections between users and equipment at the wiring rack.

ALLOT COMMUNICATIONS

STAND No. 18

www.allot.com

CONTACT	Richard Holben
E-MAIL	sales-uk@allot.com
TELEPHONE	01234 834762

Intelligent bandwidth management

Allot Communications is a leading provider of intelligent bandwidth management solutions for broadband and wide-area networks. The company's rich portfolio of pure-play DPI products is designed to transform broadband pipes into smart networks by providing the visibility, application control, subscriber management and security that are vital to delivering quality of experience (QoE), containing or deferring costs, and maximizing revenue.

Allot solutions are deployed in broadband networks around the world, including education, service providers and large enterprises. The company markets and sells its products through a dedicated sales force and worldwide channel partners backed by technical experts in each region and a global support organization providing 24/7 coverage.

ARISTA NETWORKS & FUJIN SYSTEMS

STAND NO. 36

CONTACT	David Watkins (Arista Networks) / Paul Toms (Fujin Systems)
E-MAIL	d Watkins@aristanetworks.com / paul.toms@fujinsystems.com
TELEPHONE	David Watkins 07900 410092 / Paul Toms 07584 216036

ARISTA NETWORKS

www.aristanetworks.com

Arista Networks was founded to deliver cloud networking solutions for large data centre and computing environments. Arista offers best-of-breed 10 Gigabit Ethernet switches that redefine scalability, robustness and price-performance. At the core of Arista's platform is the Extensible Operating System (EOSTM), a pioneering new software architecture with self-healing and live in-service software upgrade capabilities.

FUJIN SYSTEMS

www.fujinsystems.com

Fujin Systems, an Arista Networks partner, offers advanced technical expertise and guidance to our customers, leading-edge technologies that fulfil a specific business need, and exceptional and attentive customer service.

ARUBA NETWORKS

arubanetworks.com

STAND NO. 11

CONTACT	Bob Vickers
E-MAIL	bvickers@arubanetworks.com
TELEPHONE	01923 431721
MOBILE	07795 16938

People move. Networks must follow. Aruba securely delivers networks to users wherever they work or roam.

- Our adaptive 802.11a/b/g/n Wi-Fi networks ensure that users are always within reach of mission critical information. Rightsizing expensive wired LANs by replacing them with high-speed 802.11n Wi-Fi reduces both capital and operating expenses.
- Identity-based security assigns access policies to users, enforcing those policies whenever and wherever a network is accessed.
- Remote network ensures uninterrupted access to applications as users move.
- Multivendor management provides a single point of control while managing both legacy and new wireless networks from Aruba and its competitors.

BARRACUDA NETWORKS

www.barracuda.com

STAND NO. 44

E-MAIL	sales@barracuda.com
TELEPHONE	01256 300 100

Barracuda Networks Inc. combines premise-based gateways and software, cloud services, and sophisticated remote support to deliver comprehensive security, networking and storage solutions. The company's expansive product portfolio includes offerings for protection against email, Web and IM threats as well as products that improve application delivery and network access, message archiving, backup and data protection. Coca-Cola, FedEx, Harvard University, IBM, L'Oreal and Europcar are among the more than 100,000 organizations protecting their IT infrastructures with Barracuda Networks' range of affordable, easy-to-deploy and manage solutions. Barracuda Networks is privately held with its international headquarters in Campbell, California.

BROCADE

www.brocade.com

STAND NO. 6

CONTACT	Adrian Eyre
E-MAIL	aeyre@brocade.com
MOBILE	07500 772244

Brocade is a market leading manufacturer of end-to-end networking solutions and with better performance, lower lifecycle costs and greater green credentials, is the ideal solution for Academia, both in the data center and across the campus. Please drop by the stand to find out why. Brocade has recently been placed in Fortune's "top 100 companies to work for".

BT INET

www.bt.com/btinet

STAND NO. 13

CONTACT	Darren Mann
E-MAIL	Darren.mann@btinet.bt.com
TELEPHONE	01691 664549

BT iNet is Cisco's leading Education partner in the UK. We are continually engaging with numerous Universities and Colleges on the provision of Strategic Partnerships based on Cisco infrastructure, supporting Unified Communications & Collaboration, Security, Wireless, Data Centre, LAN and Intelligent Building services.

BT iNet has dedicated account management and engineering resources, with award-winning maintenance services to provide a truly tailored solution specific to your campus needs.

The depth and breadth of experience, portfolio, flexibility and responsiveness of our organisation, and our focus on understanding the Education sector, enable us to design, build and deliver truly integrated IT networks.

Visit us on Stand 13 (Foyer).

CALYX GROUPwww.calyxgroup.com

CONTACT	Janet Fensome
E-MAIL	info@calyxgroup.com
TELEPHONE	0844 855 9173

STAND No. 21

Calyx is the number one, independent, single source provider of end-to-end Information and Communications Technology in UK and Ireland.

Calyx is a Tier 1 accredited partner for all the major manufacturers and has over 20 year experience in providing converged voice, data, security and carrier services together with the most flexible range of managed services available.

Today, with a turnover of £100m and over 500 employees, Calyx has the breadth of capabilities and depth of expertise to take care of every aspect of your ICT through its entire life cycle.

CIENAwww.ciena.com

CONTACT	Nick Walden
E-MAIL	nwalden@ciena.com
TELEPHONE	07979 245 404

STAND No. 30

Ciena offers leading network infrastructure solutions, intelligent software and a comprehensive services practice. We specialize in transitioning complex networks into automated business assets that support more services and more applications at a lower cost. Our portfolio of software-centric optical and Ethernet platforms combines network element programmability, operating system commonality and management unification, and Carrier Ethernet-based transformation to enable our customers to change the way they compete.

CISCO

www.cisco.com/uk

STAND NO. 14

CONTACT	Darrell Greenwood
E-MAIL	dgreenwo@cisco.com
TELEPHONE	020 8824 9650
MOBILE	07715 546005

Cisco is the worldwide leader in networking for the Internet. Today, the network is a secure platform for delivering the customised and personalised experience that 21st century students expect and is influencing how education spaces are designed and utilised. At Networkshop 38 Cisco will be demonstrating solutions that allow you to support your institution's functions efficiently, whilst securely delivering services and providing capacity with resilience. Cisco's dedicated Higher and Further Education sector team will be available to discuss virtualised data centre solutions, effective use of visual and collaboration technologies within your institution and the importance of a supporting borderless network.

CLOUDPATH NETWORKS (XPRESSCONNECT)

www.cloudpath.net

STAND NO. 24

CONTACT	Kevin Koster
E-MAIL	kevin@cloudpath.net
TELEPHONE(UK)	0161 261 1400
TELEPHONE (US)	+ 1 303.495.3349

With XpressConnect by Cloudpath Networks, campuses worldwide are operating WPA/WPA2 wireless and 802.1X wired networks with an improved customer experience and reduced support costs. Whether you are deploying WPA/WPA2 for the first time or looking to increase the usability and adoption rate of your existing WPA/WPA2 SSID, the automated XpressConnect wizard ensures that students are connected quickly, simply and securely.

Stop by stand 24 to learn how XpressConnect can simplify your WPA/WPA2 wireless network.

DATA INTEGRATION LTDwww.dataintegration.com**STAND No. 50**

CONTACT	Paul Phillips
E-MAIL	paul.phillips@dataintegration.com
TELEPHONE	020 8875 6500
FAX	020 8871 2797
MOBILE	07730 700 390

Data Integration Ltd is a private, independent company specialising in the design, implementation, management and optimisation of voice and data networks for complex organisations. Our customers are leading organisations where there is an emphasis on networks being fit for purpose and efficient in terms of both performance and cost.

We specialise in security, visibility and control, application optimisation, mobility, and high performance networks. We provide network management services which focus not on network components, but on the quality of the service delivered to the network consumer, regardless of the number of elements or service providers involved in delivering that service.

DIRECT VISUAL AND TANDBERGwww.direct-visual.com / www.tandberg.com**STAND No. 49**

CONTACT	Richard Middleton
E-MAIL	education@direct-visual.com
TELEPHONE	08453 575757

Direct Visual, the UK's leading solutions and service provider for videoconferencing, and TANDBERG, the global leader in video communications manufacture, are at Networkshop 38 to demonstrate the latest desktop and classroom solutions.

Direct Visual and TANDBERG have worked in partnership for well over a decade, culminating in Direct Visual's appointment as the first TANDBERG Education Specialist TEACH Partner. Both have worked with JANET(UK) for several years, resulting in Direct Visual being awarded the JANET(UK) Framework Agreement for the supply and support of video communications to all Higher and Further Education establishments in the UK.

ESISS (EMMAN SHARED INFORMATION SECURITY SERVICE)**STAND NO. 38**www.esiss.ac.uk/

CONTACT	Peter Darby (Commercial Manager)
E-MAIL	esiss@emman.net
TELEPHONE	01509 22 5978/5979
NEW BUSINESS	07774 251556

The EMMAN Shared Information Security Service (ESISS) can provide a complete portfolio of services to your organisation. These services are designed to reduce the risk of significant information security breaches and reduce the associated costs of prevention, management, remediation and audit activities.

A dedicated team of Information Security specialists within EMMAN Ltd with a wealth of experience provides both the subscription and ad-hoc consultancy services. ESISS understands the needs of the educational environment and tailors its services to the specific needs of our community.

Feel free to contact the team to allow us to help with your Information Security needs.

ENSIGN**STAND NO. 9**www.ensign-net.co.uk

CONTACT	Patrick Hookey
E-MAIL	pat.hookey@ensign-net.co.uk
TELEPHONE	01929 556553
MOBILE	07770 427095

Ensign is the Wireless Networking specialist for your campus RF network, always placing reliability and customer satisfaction at the very top of our priorities.

Our highly technical staff, with 20+ years experience, truly understand how wireless infrastructures work, ensuring on time, on budget delivery. With Ensign's flexible approach we can utilise your own internal resource, Ensign will be pleased to provide any or all of the following: Design, Training, Supply, Testing, Survey, Installation, Commissioning and ongoing Support.

Our team of dedicated installation engineers have successfully installed thousands of APs. Aruba + Cisco Mesh accreditation allows us to provide external coverage.

ENTERASYS NETWORKS

www.enterasys.com

STAND NO. 16

CONTACT	Mark Pearce
E-MAIL	mark.pearce@enterasys.com
TELEPHONE	01635 580000
MOBILE	07818 595567

Enterasys is the network and infrastructure division of Siemens Enterprise Communications. Together we provide an outstanding strategic fit, creating a clear and strong alternative in the networking and communications industry. We have a longstanding tradition of serving education, helping universities and colleges find a balance between providing an open computing environment to students, faculty and staff while also protecting the students, IT infrastructure and information assets. We provide wired and wireless connectivity solutions to thousands of customers around the world, integrating management and security that deliver investment protection, operational efficiency, and significantly reduced total cost of ownership.

EXTERITY

www.exterity.com

STAND NO. 25

CONTACT	Fiona Bayle
E-MAIL	sales@exterity.com
TELEPHONE	01383 828250
FAX	01383 824905

Exterity Building IPTV enables educational and research institutions to deliver superior-quality digital TV and video throughout a building, a campus or a metropolitan area using the excess capacity of their existing IP network. Sources can include personal computers, video cameras, satellite TV from around the world or even broadcast-quality equipment, while content may be viewed on both analogue and digital TVs and AV displays as well as personal computers. At Networkshop 2010, Exterity will highlight AvediaServer, a full-function video-on-demand server/recorder and the company's expanding line of 1080p products for top-quality High Definition (HD) video and digital signage.

EXTREME NETWORKS

www.extremenetworks.com

STAND NO. 51

CONTACT	Richard Averly
E-MAIL	raverly@extremenetworks.com
TELEPHONE	01628 55 2400

Extreme Networks provides converged Ethernet networks that support data, voice and video for enterprises and service providers. The company's network solutions feature high performance and high availability switching that deliver insight and control enabling customers to solve their real-world business communications challenges. Operating in more than 50 countries, Extreme Networks provides wired and wireless secure LANs, data centre infrastructure and Service Provider Ethernet transport solutions that are complemented by a global, 24x7 service and support.

FORCE 10 NETWORKS

www.force10networks.com/

STAND NO. 37

CONTACT	Ben Ramsden
E-MAIL	bramsden@force10networks.com
TELEPHONE	07802 210 910

Force10 Networks is a technology leader that provides the reliable infrastructure required to build and secure intelligent services networks. Force10's products deliver the scalability, reliability and application awareness to deliver content cost-effectively from the enterprise or converged network to the mobile business user or consumer. Force10 is uniquely positioned to leverage intelligent Ethernet that creates and drives application-aware networks for wireless backhaul, metro transport and data centre environments.

More than 60,000 cell sites today are using Force10 wireless backhaul solutions worldwide, while more than 1,400 customers have deployed its Ethernet switching/routing, metro edge and converged access solutions.

FORESCOUT TECHNOLOGIES / AXIAL SYSTEMS**STAND No. 12**

www.forescout.com / www.axial.co.uk

CONTACT	Peter Thompson, Axial Systems Ltd
E-MAIL	pthompson@axial.co.uk
TELEPHONE	01628 418000

Founded in 2001 by Network Security experts and a world-renowned algorithmic mathematician, ForeScout helped to define and establish the NAC Industry with the release of its flagship product CounterAct in 2005.

World-wide, ForeScout is the second largest provider of NAC solutions;.CounterAct is a much lauded product, winning praise and awards for its ease of installation and operation, and has a significant presence in the global education market.

Headquartered in Cupertino, California, ForeScout has an R&D centre in Tel Aviv, Israel, and a global sales and support network.

FORTINET**STAND No. 39**

www.fortinet.com

CONTACT	Carl Windsor
E-MAIL	cwindsor@fortinet.com
TELEPHONE	07885 998897

Fortinet is a worldwide provider of network security appliances and the market leader in unified threat management. Fortinet's comprehensive portfolio of security gateways protects the networks of customers worldwide including the majority of the 2009 Fortune Global 100 companies.

At Networkshop 38, Fortinet will be demonstrating its broad suite of integrated security technologies that have been engineered with features that address the specific needs of the education sector, delivering maximum performance and minimal latency.

The dedicated Fortinet Education team will be available to discuss your security requirements and how we can protect your network with Fortinet's industry-leading UTM solutions.

GEO NETWORKS LTD

www.geo-uk.net

STAND No. 40

CONTACT	Tom Fulford-Brown, Business Development Manager
E-MAIL	Tom.Fulford-Brown@geo-uk.net
TELEPHONE	020 3326 9500

Geo is the only company in the UK solely focused on the design and build of bespoke dedicated fibre network solutions. Geo's flexible approach means that organisations can own and control their networks, ensuring that security, high bandwidth and resilience are guaranteed. It provides an extensive range of solutions including fully managed networks, dark fibre and co-location services. Geo enables network solutions throughout the UK. Customers include mobile operators, service providers, major banks and the public sector. Geo is listed as the seventh fastest growing UK technology company in the Sunday Times Tech Track 100 list 2009.

H₂O NETWORKS

www.h2onetworksdarkfibre.com

STAND No. 23

CONTACT	Roy Shelton, Managing Director
E-MAIL	roy.shelton@h2o-networks.uk.net
TELEPHONE	01942 686 640

H₂O Networks, part of the i3 Group, has pioneered the use of ready made ducts including the sewer network and other innovative technologies to lay dark fibre optic cables with the minimum of disruption. The two main products that H₂O provides are point to point links and Fibrezones to deliver super fast connectivity.

The Fibrezone model is a dark fibre ring built around a business sector, campus, town or city that customers within the catchment area, including local authorities, hospitals, schools and local businesses, can connect to and benefit from unlimited super fast connectivity. This model significantly lowers the cost of building bespoke fibre optic networks for H₂O's customers.

HELLERMANN TYTON DATAwww.htdata.co.uk**STAND No. 48**

CONTACT	HellermannTyton Sales
E-MAIL	sales@htdata.co.uk
TELEPHONE	01604 707420
FAX	01604 705454

HellermannTyton is an established and innovative leader in the provision of global network infrastructure solutions, offering a broad range of quality, high performance structured cabling products. Our comprehensive product range includes the unique pre-terminated, pre-tested RapidNet system, which offers flexibility and can save up to 85% on installation time.

Through innovation we are able to provide full end-to-end solutions in fibre and copper in both our traditional products and the RapidNet system. With our iD and iD Active products we also offer intelligent infrastructure management software and hardware. Our new Cat6A and fibre range, Deca 10 provides uncompromised support for 10G, ideal for future proofing any IT network infrastructure.

HP PROCURVE NETWORKINGwww.hp.com/uk/networking**STAND No. 45**

CONTACT	Clive Allen
E-MAIL	clive.allen@hp.com
MOBILE	07917 181212

For 70 years and in 170 countries, HP is helping people, businesses, and communities apply technology in meaningful ways by harnessing new thinking and ideas to deliver reliable products and services. We explore how technology and services can help people and companies address their challenges, and realise their possibilities, aspirations and dreams. We apply new thinking and ideas to create more simple, valuable and trusted experiences with technology, continuously improving the way our customers live and work. This allows them to spend less time worrying about technology and more time focusing on what really matters.

We provide infrastructure and business offerings that span from handheld devices to some of the world's most powerful supercomputer installations. We offer consumers a wide range of products and services from digital photography to digital entertainment. This comprehensive portfolio helps us match the right products, services and solutions to our customers' specific needs.

Come and visit us on stand 45 to find out more!

INFOBLOX
www.infoblox.com

STAND No. 3

CONTACT	David Moss
E-MAIL	dmosse@infoblox.com
TELEPHONE	01483 243532
FAX	07900 898899

Infoblox pioneered appliance-based IP Address Management, DNS and DHCP and continues to dominate this market. Over 40 UK universities have deployed Infoblox because of our unique approach to the provision of these services which simplify administration, improve resilience and overcome many of the security issues associated with these services. For instance, Infoblox Customers now have a simple and cost free upgrade to DNSSEC. Cricket Liu, Infoblox's VP of Architecture, will be presenting the benefits of DNSSEC alongside JANET at this year's show and will be present on the stand during the exhibition. More recently, Infoblox has been a primary contributor to the development of the TCG's IF-MAP standard. IF-MAP is widely accepted to be the future foundation for technologies such as Network Access Control, Asset Tracking & Management, Cloud Computing and virtualisation.

INTECHNOLOGY

www.intechnology.com

STAND NO. 28

CONTACT	Anton Murphy
E-MAIL	anton.murphy@intechnology.com
MOBILE	07747 152908

InTechnology is an accredited provider of managed backup and archiving solutions to the education and research community via the JANET network.

Our 'Managed Services over JANET' portfolio also includes world class Hosted IP Telephony, Hosted Microsoft OCS and SIP Trunking. Institutions can gain access to world class data centre facilities via their existing JANET connection, benefit from our managed services, and make substantial operational and economic savings by enabling more effective data management and user communication & collaboration.

Customers include Birkbeck College, British Library, London Business School, SOAS, University of Northampton and University of Westminster. See: <http://www.ja.net/services/suppliers.html>.

IPOQUE

www.ipoque.com

STAND NO. 42

CONTACT	Klaus Mochalski
E-MAIL	klaus.mochalski@ipoque.com
TELEPHONE	+49-341-59403-053
FAX	+49-341-59403-019

ipoque is the leading European provider of deep packet inspection solutions for Internet traffic management and analysis. Designed for Internet service providers, enterprises and educational institutions, ipoque's PRX Traffic Manager allows organizations to monitor, shape and optimize their network applications effectively. These include the most hard-to-detect protocols used for peer-to-peer file sharing (P2P), instant messaging (IM), Voice over IP (VoIP), tunneling and media streaming, but also many legacy applications.

The award-winning ipoque DPI engine is one of the most reliable in the industry according to independent test results published by the European Advanced Networking Test Center (EANTC).

IP PERFORMANCE

www.ip-performance.co.uk

STAND NO. 5

CONTACT	Mike Baker
E-MAIL	mbaker@ip-performance.co.uk
TELEPHONE	01275 395112 / 01275 482578
MOBILE	07977 482578

IP Performance Limited is a leading supplier of customised network infrastructure and security solutions.

Partnered with Allot, Blue Coat, Bluecat, Juniper, Avocent/Cyclades, Barracuda, Meru, LogRhythm, Alcatel-Lucent, Zeus and Netfort, our delivery of complex network solutions using leading-edge technology products is backed by our 24-hour support technical assistance centre.

We supply and support academic organisations with network security, IP address management and DNS/DHCP solutions, plus network management technology, broadband and bandwidth management solutions, URL filtering, virus management, server and application load-balancing, anti-spam, wireless LAN security, logging and event management solutions, and cost-effective and high-performance routers and switches.

Visit our stand (no. 5, in the Foyer) to catch up with us, try and win our traditional, audio-visual prize and obtain an invite to our Tuesday evening event.

JUNIPER NETWORKS

www.juniper.net

STAND NO. 22

CONTACT	David Kolundzija
E-MAIL	Dkolundzija@juniper.net
TELEPHONE	01372 389 054

Juniper Networks offers a responsive and trusted network infrastructure that helps public sector functions like governments, research and education institutions, and healthcare organizations around the world to maximize their IT infrastructures. Juniper Networks helps public sector functions to consolidate and deliver vital information and services to millions of people dispersed throughout the world during critical events, ensures the protection of sensitive information and assets and allows users in different geographies to collaborate in a real-time, secure environment. The company delivers to IT departments the capability of implementing operational improvements and cost reductions associated with major campaigns like data centre consolidation and reducing administrative, training and troubleshooting costs.

KHIPU NETWORKS LIMITED**STAND NO. 15**

www.khipu-networks.com

E-MAIL	sales@khipu-networks.com
TELEPHONE	0845 272 0900
FAX	01252 629008

Khipu Networks has exceptional experience with over 100 Education customers throughout the UK & Ireland. We are continually improving HE solutions which cover a spectrum of technology areas including Adaptive Network Security(ANS), Network Access(NAC) and Wireless, Wired & Unified Communications. Our belt and braces approach eases IT support management and automates network team tasks, proven by our success in enhancing network security, access and visibility in 200+ projects. By integrating technology from selected partners we can provide institutions with the best value, scalable, secure and flexible solutions. The end result is a happy customer and an enhanced education experience encountered by all.

LANCOPE**STAND NO. 8**

www.lancope.com

CONTACT	Steve Simpson
E-MAIL	international@lancope.com
MOBILE	07970 068483

Lancope®, Inc. is the leader in NetFlow Analysis and the provider of the StealthWatch® System for flow-based network performance and security monitoring. Delivering unified visibility across physical and virtual networks, StealthWatch eliminates network blind spots and reduces total network and security management costs.

StealthWatch monitors the networks of Global 2000 organizations, academic institutions and government entities worldwide. Lancope also partners with fellow best-of-breed solution providers through its Technology Alliance Program, including Cisco Systems, Brocade, Blue Coat, VMware, IBM Tivoli, Check Point, TippingPoint, ArcSight and A10 Networks.

MAYFLEX

www.mayflex.com

STAND NO. 52

CONTACT	Ian Irving – Regional Sales Manager – North
E-MAIL	sales@mayflex.com
TELEPHONE	0121 326 7557

Specialists in their field, Mayflex offers the complete solution for IP communication, covering cabling infrastructure, networking and physical security products. Whether it's designing and installing cabling infrastructure, environmental monitoring or building a solid security system, Mayflex can help.

With service excellence through experience and flexibility, Mayflex supplies only the best products from brands such as Excel, Uniprise and Belden, Extreme, Aruba and LevelOne, and Mobotix and ACTi. Experts will be on hand to guide you through the best of breed product ranges and help you find the right solution for all your project needs.

MOLEX PREMISE NETWORKS

www.molex.com

STAND NO. 17

CONTACT	James Wilkie
E-MAIL	james.wilkie@molex.com
MOBILE	07714 853733

Molex Premise Networks is the leading provider of Advanced Physical Layer Lifecycle Management (APLLM); a revolutionary suite of solutions enabling organisations to manage their infrastructure with a unique level of visibility and security.

Using a combination of software, electronics and traditional data transport solutions, APLLM enables organisations to track, manage and secure their infrastructure investment from the planning stage, right through installation and finally on to any eventual upgrade.

Using innovative technology, Molex works globally with academic institutions to improve the effectiveness and efficiency of infrastructure investments, increasing productivity, asset security, streamlining processes and offering a genuine return on investment.

MRV COMMUNICATIONS

www.mrv.com

STAND No. 7

CONTACT	Stuart Williams
E-MAIL	swilliams@mrv.com
TELEPHONE	01344 894499
FAX	01344 894498
MOBILE	0777 620 8297

MRV: Manufacturer of Wave Division Multiplexing Solutions

- CWDM and DWDM in a one chassis solution. Up to 160 channels, 10GE and beyond, active or passive for any size of network over MM, SM and single fibre.
- Leading edge technology including tunable lasers, Raman, edfa amplification & optical performance monitoring.
- The MRV Corporation manufacture pluggable SFPs and XFPs including a specialist broadcast video SFP.
- Remote 'out of band' management and free space optics complete the picture for all your fibre network requirements.

MRV supplies numerous UK universities and colleges. Visit us at Stand 7 to discuss all your fibre network needs.

MUTINY

www.mutiny.com

STAND No. 31

CONTACT	Rachel Lane
E-MAIL	rachel.lane@mutiny.com
MOBILE	07791 181652

Mutiny is a network and server monitoring system that uses industry standard SNMP to gather information from IT Infrastructure, and process and display the results in a multi-user web front-end that allows administrators and managers alike to quickly assess the health of their estate.

Mutiny Network Monitoring Software includes:

- Interactive web based graphical interface with pop-up windows and rich graphical displays.
- Flexible SMS, Email and RSS alert options to provide reliable notification of network related problems.
- Comprehensive polling options to minimise the impact on network traffic.
- Data collection and graphing facilities to analyse network utilisation, trends and NetFlow.
- Rapid methods of discovering networked devices to ensure quick installation and simple configuration.

NETFORT TECHNOLOGIES LTD

www.netforttechnologies.com

STAND NO. 2

CONTACT	Dudley Moor-Radford, Commercial Director
E-MAIL	dudley@netforttechnologies.com
TELEPHONE	0207 060 2850

NetFort Technologies is the company behind LANGuardian, a software product that enables universities to monitor what is happening on their networks. With LANGuardian it is possible to analyze network activity, monitor P2P traffic, protect against malware, and troubleshoot network problems. The new Policy module manages and assigns bandwidth consumption quotas to individual policy groups. The LANGuardian stores traffic data in a database, making it possible to view historical as well as real-time network activity.

Customers of NetFort Technologies include John Moores University, University of Gloucester, University of Central Lancashire, London School of Economics, and Trinity College Dublin.

NEXANS

www.nexans.co.uk/LANsystems

CONTACT	Mike Holmes
E-MAIL	ncs.uk@nexans.com
TELEPHONE	01256 486640

STAND No. 4

Correct cabling specification and management enables a migration path to next generation 40 Gigabit applications and increases potential for energy savings.

Nexans is the global leader in the cabling solutions industry with a turnover of £6.8 Billion and commercial activities worldwide. It will be showing solutions which include:

- LANmark-7A GG45 – energy efficient and 40G capable copper cabling which is fully compatible with existing RJ45
- MPO fibre systems
- Environmental Monitoring and Access Control (EMAC) systems
- LANsense infrastructure management.

Nexans endorses the EU Code of Conduct for Data Centres.

NORMAN

www.norman.com

CONTACT	David Robinson
E-MAIL	david.robinson@norman.com
TELEPHONE	01908 847413

STAND No. 1

Founded in 1984, Norman is a pioneer in proactive content security solutions and malware forensic tools. Through our unique SandBox, DNA matching and Exploit Detection technology Norman is considered a leading authority on proactive antimalware technologies, working with technology partners such as MessageLabs, eEye Digital Security and Microsoft to provide malware protection within their solutions.

Norman offers a comprehensive security portfolio addressing concerns such as network, email, data, mobile and information security, and is protecting the valuable data resources of millions of customers worldwide.

For full details on the Norman portfolio including patch management, email protection, network security, malware analysis, malware incident response and endpoint security visit www.norman.com.

OUT OF BAND SOLUTIONS LTD

STAND No. 26

www.outofbandsolutions.com

CONTACT	Richard May
E-MAIL	richard@outofbandsolutions.com
TELEPHONE	01628 525 511
FAX	01628 531 296

Out of Band Solutions provide tools to help you meet and improve your Service Levels.

Our products allow remote access to console and power rebooting for servers, firewalls, routers and switches; both 'in band' through the existing network infrastructure and 'out of band' via AES encrypted & 2 factor authenticated dial-up or GPRS.

JANET uses our solutions for its core network management and many Universities use our secure remote console, and power management technologies, to minimize downtime.

Understanding power consumption and planning its reduction is usually high on your agenda. Our range of power monitoring and management solutions brings a greater understanding to your business.

PERVASIVE NETWORKS

www.pervasive.co.uk

STAND NO. 43

CONTACT	Louise Pengilley
E-MAIL	louise.pengilley@pervasive.co.uk
TELEPHONE	0870 004 0002
MOBILE	07900 223 220

Pervasive specialises in the design, implementation and support of secure, high availability campus infrastructure for education, and has recently been selected by **The University of Manchester** to upgrade its campus wireless network with an Aruba Networks 802.11n solution. For more information see <http://www.pervasive.co.uk/CASE>.

Customers include Cardiff University, Lancaster University, University of Birmingham, University of Hull and London Business School.

We strategically partner with the following vendors for voice, data, security and mobility solutions:

- Aruba – Platinum Partner & 2009 Partner of the Year
 - Brocade – Elite IP Networking Partner/ Select SAN Partner
 - Fortinet – Silver Partner
 - HP ProCurve Networking – Master Specialist – Partner of the year 2008 & 2009
 - Inmon Authorised Partner
 - Mitel – Select Partner
-

**QOLCOM WIRELESS NETWORKS &
TRAPEZE NETWORKS**

STAND NO. 19

www.qolcom.co.uk / www.trapezenetworks.com

CONTACT	Heidi Rollett (QoLcom) Mark Smith (Trapeze Networks)
E-MAIL	hrollett@qolcom.co.uk msmith@trapezenetworks.com
TELEPHONE	01635 298 021 (QoLcom) 0161 498 3753 (Trapeze Networks)

QoLcom is one of the UK's leading Wi-Fi integration specialists, providing secure Wi-Fi networks and applications to the education sector using best-in-breed products including Trapeze Networks and Bradford Networks. QoLcom is proud to be working with many educational establishments throughout the UK including Aberdeen, Bangor, Brighton, Cranfield, LSBU and UHI.

NonStop Wireless Trapeze solutions provide the highest levels of reliability, performance, security and management for today's most demanding mobile applications, including data, voice, video and real-time location services. Trapeze is committed to delivering the most scalable, fault-tolerant WLAN infrastructure and solutions for the enterprise market.

SCD GROUP LIMITED

www.scd-ltd.com/

STAND No. 32

CONTACT	Phil Dickenson
E-MAIL	pdickenson@scd-ltd.com
TELEPHONE	0870 750 6416
MOBILE	07976 330638

Micro-trenching: SCD Group is a leading investor in environmentally friendly civil engineering technology. When deployed with blown fibre micro-trenching ensures very cost effective private fibre infrastructures.

Dark Fibre: SCD is a well established provider of private dark fibre infrastructures to Universities and Colleges throughout the UK. With our own civil engineering capability and excellent relationships with local authorities, we take ownership of all aspects of deploying dark fibre including all necessary licenses and wayleaves.

Fibre Splicing: As founding members of the Fibre Optics Industry Association, we have many years experience in installing, splicing and testing optical fibre cabling systems.

SONICWALL

www.sonicwall.com

STAND No. 35

CONTACT	Stephen Carr, SonicWALL Enterprise Sales Manager
E-MAIL	scarr@sonicwall.com
TELEPHONE	07525 687402 / 01932 573900

The Internet has opened up a world of opportunities and transformed how students learn and lecturers teach. However, this does not come without its challenges.

SonicWALL has developed a complete range of fully integrated security appliances delivering everything you need to protect your network, from affordable solutions tailored for individual faculties to powerful solutions with the capacity to serve an entire campus. Its solutions can provide:

- Secure Network Traffic Controls
- Secure Remote Access
- Secure Wireless
- Inbound/outbound Email Filtering and Anti-Spam
- Pinpointing and addressing of Network Vulnerabilities
- Data backup and recovery.

SYMANTEC (UK) LTD

www.symantec.com/publicsector

CONTACT	Joy Durrell
E-MAIL	joy_durrell@symantec.com
MOBILE	07894 886701
TELEPHONE	0870 243 1080

STAND NO. 10

Symantec solutions help keep critical information secure, available, and compliant – and help keep public sector organisations up and running, no matter what happens. Rising data growth, technology upgrades and increasingly complex IT environments are but a few of the issues. In addition, organisations need to improve the mobility of staff, enable interoperability and collaboration with other public entities, and ensure the integrity and transparency of public administration.

By delivering an integrated approach to information and systems management, Symantec helps organisations create a trusted IT environment; one that is free from security breaches, complies with regulations and is available and high performing at every level.

SYNETIX SOLUTIONS LTD**STAND No. 34**

www.synetixsolutions.com

CONTACT	Kristian Connor
E-MAIL	kristian.connor@synetixsolutions.com
TELEPHONE	01252 711314 / 01252 716824

Synetix is a specialist provider of security, storage and infrastructure services to enterprises. Founded by individuals with over a decade's experience within the IT industry, Synetix delivers a proven and innovative portfolio of products and services to leading UK customers within Education, Financial, Retail, Central and Local Government, NHS and Manufacturing.

With a core of top level vendor accreditation and strong delivery processes based on Prince 2 and ITIL best practice, Synetix has established long standing relationships with its clients to help deliver high value IT solutions. To help its clients meet the challenges of modern business process and to improve flexibility, Synetix has an extensive solutions portfolio that can be delivered via the use of on-site IT, hosted applications and remotely managed services.

THUS LTD**STAND No. 46**

www.thus.net

E-MAIL	thuseducation@thus.net
TELEPHONE	0808 202 0816

THUS, a Cable&Wireless business, provides telecommunication services for education and research customers offering appropriate, tailored solutions based on 12 years of experience working in the sector. These solutions include a range of traditional and IP-based voice, data and Internet services to customers across the UK's most extensive next-generation network.

THUS's education team is the sole focus for education and research customers across the Cable&Wireless Group and is uniquely, 100% focused on the needs of the sector. Our considerable expertise and insight into the unique challenges and requirements of the sector enables us to provide tried and tested next-generation technology solutions for education, allowing them to achieve their objectives.

THUS's education account managers are experts in their field and work with organisations to ensure that they choose the right telecoms and technology solution to meet their specific needs. This focus and depth of understanding has led us to create specific education sector-only propositions which are backed up with the financial stability, network reach and technical capability that comes with being part of the successful global Cable&Wireless business.

TRIPLECOMM LIMITED

www.triplecomm.co.uk

STAND No. 47

CONTACT	Chris Plastiras
E-MAIL	chrisplastiras@triplecomm.co.uk
TELEPHONE	020 83608555
MOBILE	07760 781793

Triplecomm was formed in February 1991 and has been involved in the field of IT networking technologies since that time.

Since 2002 we have been providing network monitoring solutions to academic, public, private and financial enterprises.

We offer a highly scalable network infrastructure monitoring tool delivering:

- Unlimited SNMP monitoring of Network Interfaces, NBAR, IP SLA, Traps, CPU, Memory, Temperature, Printers, UPS, etc
 - Unlimited NetFlow, sFlow and LAN Traffic collectors
 - One PC-based server scales up to 500,000 network interfaces
 - No need for additional pollers
 - Effortless software as an appliance installation
 - Device configuration is performed in minutes
 - User customized alerting and reports
 - Data is stored in UTC and reported in any user specified time zone
 - Historical data is never rolled up and kept online forever
 - Web browser user interface
 - Low impact on the network.
-

TUSCANY NETWORKS**STAND No. 20**

www.tuscanynetworks.com

CONTACT	Caroline Barker-Littley
E-MAIL	marketing@tuscanynetworks.com
TELEPHONE	01256 303 700

Analysts are now stressing the importance of intelligent DDI (DNS, DHCP & IPAM) services in supporting the rapid growth in IP addressing requirements within businesses. These three vital functions support a complex IP infrastructure that underpins the network.

Founded in 1996, we are the UK's leading experts in the specialist provision and support of core IP services to enable 'Business over IP'.

Because of our

- in-house expertise
- software development capabilities
- long-standing trusted relationships with our customers and IP vendors

no one else is better placed to install, maintain and ensure the ongoing health of your IP network.

VERIZON BUSINESS**STAND No. 27**

www.verizonbusiness.com

CONTACT	Stuart Bailey
E-MAIL	stuart.bailey@verizonbusiness.com
TELEPHONE	0118 905 7167

Verizon Business, a unit of Verizon Communications, is a global leader in communications and IT solutions. We combine professional expertise with the world's most connected IP network to deliver award-winning communications, IT, information security and network solutions. We securely connect today's extended enterprises of widespread and mobile customers, partners, suppliers and employees – enabling them to increase productivity and efficiency and help preserve the environment. Many of the world's largest businesses and governments – including 96 percent of the Fortune 1000 and thousands of government agencies and educational institutions – rely on our professional and managed services and network technologies to accelerate their business.

VIRGIN MEDIA BUSINESS

STAND NO. 33

www.virginmediabusiness.co.uk

CONTACT	Nick Ruddick – Account Manager
E-MAIL	nick.ruddick@virginmedia.co.uk
TELEPHONE	01183 762275
MOBILE	07774 657738

Virgin Media Business is the UK's only telco with a nationwide fibre optic Next Generation Network. Launched in February 2010, the company aims to bring the Virgin philosophy to the business telecoms market, providing innovative, high quality solutions built on brilliant customer service.

Virgin Media Business is the largest business-to-business brand in the Virgin group. With a strong product portfolio that includes its market leading Ethernet services, it uses its network asset in order to create bespoke tailored telecoms solutions for its customers. Employees are located at 40 offices across the UK, allowing Virgin Media Business to be closer to its customers in every sense.

XIRRUS

STAND NO. 29

www.xirrus.com/

CONTACT	Ben Wilson – Country Manager
E-MAIL	ben.wilson@xirrus.com
MOBILE	07884494857

Xirrus is the leader in High Performance Wi-Fi™. We design and manufacture the patented Wi-Fi Array. The Wi-Fi Array integrates 4, 8, or 16 radios and high-gain directional antennas into a single device along with an onboard Gigabit Switch, Wi-Fi Controller, Firewall, and dedicated Wi-Fi Threat Sensor, providing the performance and security to replace traditional workgroup switches with Wi-Fi technology. The Xirrus solution makes traditional Wi-Fi offerings obsolete by delivering 2X more range, 4X more coverage, 8X more bandwidth, and 14X more throughput – all while using 75% fewer devices, cables, switch ports, and installation time compared with any other offering.

ACKNOWLEDGEMENTS

Our thanks to the following companies who have supported Networkshop 38 through sponsorship:



Khipu Networks Ltd who have sponsored delegate bags.

Stand number 15



H₂O Networks who have sponsored the Exhibitors Drinks Reception on Tuesday night.

Stand number 23



BT iNet who have provided lanyards for delegate badges

Stand number 13

And thanks to Premier Inns for supplying pens for delegate bags.

NETWORKSHOP 39 - UNIVERSITY OF HERTFORDSHIRE

Networkshop 39 will take place at the University of Hertfordshire from 12 April to 14 April 2011.

Networkshop will be based on the de Havilland campus with all sessions, the exhibition and the accommodation within a very short distance of each other. These facilities worked very well when Networkshop was last held in Hatfield in 2006 and we look forward to working with the staff at the University of Hertfordshire again to ensure a successful Networkshop 39. We hope to see you in Hatfield in 2011.



JANET(UK)[®] manages the networking programme on behalf of the Higher and Further Education and research community in the United Kingdom. JANET, the United Kingdom's education and research network, is funded by the Joint Information Systems Committee (JISC).

For further information please contact:

JANET(UK)[®]

Lumen House, Library Avenue

Harwell Science & Innovation Campus

Didcot

Oxfordshire

OX11 0SG

JANET Service Desk

Tel: 0300 300 2212

Fax: 0300 300 2213

E-mail: service@ja.net

Tel: + 44 (0) 1235 822200

Fax: + 44 (0) 1235 822399

Copyright:

This document is the copyright of JANET(UK)[®]. Parts of it, as appropriate, may be freely copied and incorporated unaltered into another document unless produced for commercial gain, subject to the source being appropriately acknowledged and the copyright preserved. The reproduction of logos without permission is expressly forbidden. Permission should be sought from JANET[®] Service Desk.

Trademarks:

Networkshop[®] is a registered trademark of the JNT Association.

JANET[®] is a registered trademark of the Higher Education Funding Councils for England, Scotland and Wales. The JNT Association is the registered user of this trademark. JANET(UK)[®] is a registered trademark of the JNT Association.

Disclaimer:

The information contained herein is believed to be correct at the time of issue, but no liability can be accepted for any inaccuracies. The reader is reminded that changes may have taken place since issue, particularly in rapidly changing areas such as Internet addressing, and consequently URLs and e-mail addresses should be used with caution. JANET(UK)[®] cannot accept any responsibility for any loss or damage resulting from the use of the material contained herein.



Networkshop Online is available to delegates registered for Networkshop and is packed with additional information and tools to help you make the most of your attendance at this year's conference.

Register TODAY to see up to date information on:

- ◆ Session previews
- ◆ News
- ◆ BOF discussion area
- ◆ Programme
- ◆ Conference dinner details
- ◆ Maps
- ◆ Accommodation and transport

During the conference all news and pages will be updated regularly and conference updates can be seen through the LIVE Twitter feed and discussion forums.

After the conference you will be able to access video and audio recordings of the sessions and continue to discuss the topics raised.

Networkshop Online is hosted on EdLab, to register please go to:

www.ja.net/training/edlab