Technology

Information is available below on the following topics:

- ADSL
- ATM
- Free Space Optics - IR Laser
- Firewalls
- Inter-site Connectivity
- Leased Lines - Circuits
- Remote Site Network Setup
- Multi-homing
- VPN
- Wireless - 802.11 microwave

Technical Papers and Links

ADSL (Asymmetric Digital Subscriber Line)

The JISC TechWatch service promotes the following links:

- ADSLguide [1] - UK ADSL news and information site
- ADSL Forum [2] - Vendor Group - information, tutorial
- ADSL Tutorial - International Engineering Consortium tutorial
- ADSL tutorial - Tel Aviv university tutorial
- The World of ADSL [3] - UK ADSL news and information site

ATM (Asynchronous Transfer mode)

The JISC TechWatch service promotes the following links:

- ATM Forum [4]
- ATM Internetworking - Cisco tutorial
- ATM tutorial - International Engineering Consortium tutorial

VPN - (Virtual Private Network)

- Different Flavours of VPN: Technology and Applications [5]) - Victor Olifer discusses VPNs from a JANET perspective in the light of the recent VPN survey and implications for a possible central service and detailing the different types of VPN and VPN-enabling technologies; IPSec/SSL encryption, GRE/L2TP tunnelling, policy-based, MPLS and switched SDH/DWDM optical networks.
- Survey: VPN state of use within JANET community and requirements for a possible managed JANET service

[6] - results of survey conducted by JANET(UK) March - April 2006 now available.

- <u>Secure Virtual Private Networks</u> [7]- Dr John Graham's guide brings together the subject areas of encryption, authentication and tunnelling required to implement secure VPNs into a coherent account of the subject. The general principles of each topic are described along with the implementation of each used by the Secure Internet Protocols (IPSec). Finally two practical examples illustrate the need for wide area connectivity and how VPNs can be created to provide it. Hard copy available from <u>JANET Service Desk</u> [8] .

Firewalls

- <u>Firewall Implementation at JANET-connected Organisations</u> [9] - a technical guide by Matt Cook of Loughborough University. This paper is a comprehensive guide to firewalls and ranges from an introduction to firewalls and present-day threats to specific details of advanced implementations and a review of the various techniques that can be employed. Open source software is reviewed together with an overview of the various offerings from Cisco.
- <u>The Use of Firewalls in an Academic Environment</u> [10] - This JISC report, produced in April 2000 is the result of work at the Department of Electronics and Computer Science at University of Southampton into methods by which secure and "safe" network access can be offered to staff and students. The project began with the brief to investigate methods for secure transient access to networks (e.g. via dialup and ad hoc laptop PC connections). However the report is now focused on the general issues behind a default deny firewall installation. At the time of writing there were over 90 different commercial firewall solutions available, making selection a difficult and confusing process. One purpose of the report is to provide a framework and methodology for evaluating the available solutions. Also included is a report on technical deployment issues.

Inter-site Connectivity

- <u>Inter-site Connectivity and Last Mile Technologies Guide</u> [11] – This guide introduces the technologies available in the UK for the connection of computer networks between multiple sites to create wide area networks. The aim of the guide is to help in the decision making process as to which technology should be adopted or investigated for a particular application. The target audience is IT managers and technicians who have a good understanding of LANs and some knowledge of WANs and who have been tasked with establishing, upgrading or reviewing inter-site data communications. Other readers who may benefit are non-technical decision makers for whom this guide will provide an insight into the issues and options available in selecting inter-site data communications solutions.
- <u>Fluke Networks; Monitoring your WAN - When, What and How</u> [12] - this white paper seeks to justify why you should monitor your WAN links and presents in an interesting way the causes of slow service or application performance on a WAN link and what you should monitor. It is a bit light on the 'how to' side and as you would expect each monitoring parameter is neatly illustrated by a Fluke Networks OptiView screenshot, but this is nevertheless a worthwhile read.

Leased Lines - Circuits

- Leased Lines - Circuits Guide [13]

SoHo Remote Site Setup

- How to setup Cisco 871 wireless router [14] - external link to article on how to set up an advanced SoHo configuration with the Cisco 871 wireless router, including a companion template that generates configuration output.

Also: Configuring the Cisco 851W or 871W: Standard IOS [15]

Free Space Optics - IR Laser

- Competitive comparison of the major free-space optics solutions [16]

Multi-Homing

- Further Information and Links on Multi-homing and BGP [17]

Wireless

- JANET Wireless Technology Advisory Service
- JANET(UK) Technical Guide - Surveying Wireless Networks [18] - an excellent technical guide on the subject of wireless network surveys. It covers the basics of wireless networking and goes on to explain surveying and planning techniques using open source tools such as Netstumbler and Kismet. Details of proprietary tools such as Airmagnet are also included. The document covers advanced topics such as locating rogue acess points and reducing transmission power to raise access point density.

Any problems, comments or suggestions regarding this page, please e-mail the MCAS service manager [19].

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Links
[1] http://www.adslguide.org.uk/
[2] http://www.dslforum.org/
[3] http://www.world-of-adsl.com/
[4] http://www.atmforum.com/
[5] http://community.ja.net/library/advisory-services/different-flavours-vpn-technology-and-applications
[6] http://www.ja.net/development/network-engineering/vpn/results-of-the-janet-vpn-service.html
[7] http://community.ja.net/library/advisory-services/secure-virtual-private-networks
[8] mailto:service@ja.net
[9] http://community.ja.net/library/advisory-services/firewall-implementation-janet-connected-organisations
[10] http://www.jisc.ac.uk/media/documents/publications/jisc-bp-infosafety-v1-final.pdf
[11] http://community.ja.net/library/advisory-services/inter-site-connectivity-and-last-mile-technologies-guide
[12] http://www.flukenetworks.com/FNet/en-gb/findit?Document=2148471
[13] http://community.ja.net/library/advisory-services/leased-lines

[14] http://articles.techrepublic.com.com/5100-1035-6102399.html

[15] http://articles.techrepublic.com.com/5100-1035_11-6112367.html?tag=nl.e138

[16] http://www.freespaceoptic.com/comparison.htm

[17] http://community.ja.net/library/advisory-services/multi-homing

[18] http://community.ja.net/library/advisory-services/surveying-wireless-networks

[19] mailto:mcas@ja.net