LINX helps protect Euro-IX exchanges from flooded traffic

A software package named IXP-Watch — designed by LINX engineer Rob Lister to give early warning of flooded traffic that could disrupt the exchange — is being offered to fellow members of Euro-IX, the association of European Internet exchanges.

IXP-Watch has already been adapted for use by the following exchange points in Europe: AMS-IX (Amsterdam), DE-CIX (Frankfurt), IX (Vienna) and XchangePoint (London).

It relieves engineers from the time-consuming responsibility of visually monitoring exchange traffic throughout the day to identify any anomalies and prevent the peering LANs being overloaded with unauthorised data.

At LINX, IXP-Watch is programmed to sample network traffic every 15 minutes and to issue e-mail alerts at the first sign of problems caused by conditions such as broadcast storms or flooded traffic. It allows engineers to identify the member that is causing the problem and stop it escalating to a point where it disrupts the efficiency of the exchange.

IXP-Watch also keeps a historical record of incidents so that anomalies can be analysed and details reported to the originator to prevent a recurrence. Reports can also be submitted to equipment vendors to inform them how their switches and routers performed under certain conditions.

"Before IXP-Watch, the process of monitoring the traffic on the exchange was largely painful, reactive and manual," said Rob. "Engineers had to log into a server connected to the peering LAN and observe the current broadcast traffic in real time.

"This approach, apart from being time-consuming, had several drawbacks. It was difficult to identify more than one or two types of problem at a time owing to the sheer volume of frames scrolling past. Recognition of particular faults required manually working through frames and diagnosing what was happening in a particular event."

"It was not possible to store a historical record of events and, of course, when we split the exchange into two diverse LANs, the monitoring burden was doubled."

Rob monitored exchange traffic for several months to identify anomalies that should be programmed into the IXP-Watch script. The first version was created in November 2001 and the possibility of offering it as an open source for Euro-IX members was raised when it was demonstrated during a network monitoring project hosted by LINX at its Tooley Street offices in July 2002.

The script was originally written on FreeBSD and then "ported" to Redhat, says Rob. Other exchanges may therefore have to modify the program to match their individual needs and operating systems.

Sexual Offences Bill touches ISPs

Protection for children and the most vulnerable is at the heart of the Sexual Offences Bill which the government published earlier this year. Most of the proposed legislation is in areas far removed from the activities of ISPs but a few of its provisions have an impact on the Internet industry.

The proposals include a new offence of 'grooming' based on meeting a child with the intention of committing a sex offence. The legislation will also permit the making of civil orders — to apply both to Internet and off-line grooming — which will enable restrictions to be placed on people displaying inappropriate sexual behaviour before an offence is committed.

The Bill also makes complex changes to the age limits for viewing indecent pictures (up from under 16 to under 18 in defined circumstances).

Roland Perry, LINX director of public policy, said: "The Bill happily does not focus on issues related to the Internet but has a much wider scope. How some of the provisions will be applied, and how ISPs may be required to assist in investigating offences, remain as issues to be resolved.

"However, the Bill introduces a defence for 'making' pictures if authorised for the purposes of a criminal investigation. Although it was unlikely that there would ever be a prosecution in such circumstances under existing legislation, the new proposals will provide protection for the Internet Watch Foundation, ISPs and their employees involved in dealing with these issues."

Inside this issue

- Advanced Courses from the Ripe NCC
- LINX Payment Scheme benefits Members
- Roland Perry to leave LINX
- LINX welcomes OFCOM approach
- Best practice package launched
- LINX plans partnership scheme
- Europe has more UK Internet links than USA
- Dual port rule may be scrapped
- Europe backs freedom of Internet Communication
- LINX assists Public Sector
- NetServices makes offering broadband easy and quickly profitable
- Facing the future from strong position
- LINX backs IWF funding appeal

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Advanced Courses from the RIPE NCC

The RIPE NCC is offering its members two new courses in 2003: The Routing Registry and the DNSSec training course.

The Internet Routing Registry is still not widely used by network operators. This is partly because it is necessary to learn a new language for describing routing policies: RSVP (Routing Policy Specification Language).

The one-day Routing Registry course explains the advantages for engineers in using the registry, how to access it and automated maintenance of routing configuration in big and complex networks; troubleshooting; and consistency, scalability and security of routing policy information. It also gives an introduction to various tools developed by the RIPE NCC (eg, RConfig) and to projects of the RIPE NCC that provide additional analysis of Internet-wide routing information and/or produce advice on how to improve and correct members' own routing policies.

The DNS Security (DNSSec) course is part of the ongoing programme to improve security in the Internet infrastructure. It provides an introduction to DNSSec and related tools, trying to raise awareness of the availability and the possibilities of the security technology. The course is designed for "early adopters" of DNSSec, since the protocol is not yet standardised. Nevertheless, it is still of interest to all Local Internet Registries (LIRs) since it also covers specific RIPE NCC procedures set up to secure the in-addr.arpa zone.

The RIPE NCC continues to offer LIR training courses which take place approximately once a week. They cover the policies and procedures for distributing Internet resources, administrative aspects of operating the LIR, using available tools to make those tasks easier, and communicating with the RIPE NCC.

All these courses are available only to RIPE NCC members. To apply, one needs either to be an officially registered contact person of the LIR, or the application needs to be confirmed by such a contact person.

A list of forthcoming RIPE NCC training courses is available at http://www.ripe.net/cgi-bin/courseslist.pl.cgi and on-line registration can be made at http://www.ripe.net/cgi-bin/trainingform.pl.cgi.

For more information, write to training@ripe.net or visit http://www.ripe.net/training/.

LINX Payment Scheme benefits Members

LINX has made major changes in the financial arrangements for members. The basic port fees and joining fees have been reduced and charges to members are now much more directly linked to the amount of traffic they pass through the exchange.

JOINING FEES have also been reduced in fact, they have been halved - because at their original level they were thought to discourage smaller ISPs from applying for membership.

The new pricing scheme holds the income to LINX fixed at the budget level agreed by members at the start of each financial year. This avoids the risk of LINX taking more money from members than is required to meet its operational expenses simply as a result of a high level of traffic growth.

At the same time as changing the basis of its charges, LINX has offered members alternative methods of payment, including a direct debit 'payment in arrears' scheme which helps ISPs to spread the costs of their LINX membership more evenly through the year. Those members which still prefer to pay in advance have similarly benefited from an increase from two billing periods to four, giving obvious cash flow advantages.

'All these changes have resulted in a fee system that scales better and is fairer to smaller members. This in turn raises the prospect of greater economies of scale because we can easily absorb more (smaller) members on the same fabric,' said LINX chief executive officer John Souter.

The changes in the fee structure have meant some alterations in the Memorandum of Understanding which governs payment of fees. LINX chief operating officer Howard Fisher said: 'We have tried to make the rules as simple as possible to understand and apply as possible. Like any business, LINX needs a positive cash flow to survive and it is important that fees are paid on time. Late payment by some members penalises those who pay on time because their cash is tied up covering debts.' The Memorandum of Understanding which all members sign up to when they join is designed to protect members' interests by setting out clear rules for prompt payment.'

Members may choose to pay fees in advance or in arrears. When paying in advance fees are due quarterly on the first day of January, April, July and October of each year. When paying in arrears, payment for fees must be made monthly by direct debit. However, the basic membership fees must continue to be paid quarterly in advance.

Howard said: 'Matters of payment and invoicing are often dealt with by departments in ISPs that are far removed from the technical staff who most regularly have contact with LINX. We recognise that this can cause problems and are happy to work with people to resolve these. The onus, though, is on the members to pay their fees on time.'

Invoices are normally due for payment within 30 days of the invoice date. When payments are late, LINX can take various actions - up to and including disconnection - once agreed warning and notification procedures have been completed. Members will be asked at the next LINX meeting to vote on a proposal to extend the payment period to 60 days, with an additional 'cost of money' charge for those members taking the longer period.
Roland Perry to leave LINX

Roland Perry, LINX's director of public policy, is to leave the organisation at the end of June. He is setting up The Internet Policy Agency to help organisations understand and create good UK, European and International Internet policies. Roland will be working in the UK and the US.

“Roland has made a truly unique contribution not just to LINX but to the whole of the Internet industry.”


Equally importantly and effectively, he has been involved in much lower profile work advising government, legislators and regulators on the practicalities and commercial realities of Internet technology. This has led to the quiet withdrawal or modifications of many ill-considered proposals which could have been a significant burden on the industry.

He is a member of the Home Secretary’s Child Protection Task Force (where he chairs the Anti-SPAM Best Practice subgroup) and leads the UK industry delegation to G8 Hi-tech Crime meetings. He is a member of the main board and funding council of the Internet Watch Foundation, vice chairman of the Internet Crime Forum and sits on both the Network Interoperability Consultative Committee and the Telecommunications Ombudsman Internet working group as an Association of Communications Services Providers representative.

John Souter said: “Roland has made a truly unique contribution not just to LINX but to the whole of the Internet industry. His wide-ranging knowledge has made him invaluable not just to his colleagues but also, often, to government.”

Roland’s knowledge stems from his extensive experience in the industry which stretches as far back as 1983 when he created an online supplement for Radio and Electronics World. Just over a decade later he helped to create the concept, consumer interface and partnerships for the ISP UK Online, now part of Easynet.

Roland went on to become the managing director of online conferencing company GIX. When he moved to Edfex, a satellite and Internet trading service, he used his experience of running an ISP in his role as director of user equipment development.

Like many people from the early days of the Internet industry, Roland was formerly one of the pioneers in the computer industry. He opened the UK's fourth computer retail store in 1978, selling kits imported from the USA, and then went on to project-manage the engineering team that created AMSTRAD's most successful computers including the CPC464 home computer, the PCW word processor, the PC1512 and the PC1640, and one of the first consumer-portable computers with a built-in modem.

Roland has also considerable experience as a writer. He has freelanced for The Independent, The Guardian and many computer titles, including PC Magazine. In the mid 1990s he wrote regular columns in Computer Shopper and Computer Retail News and in 1994 he was a finalist for the BT Technology Journalist of the Year award.

In February 2001 Roland was nominated as Internet Hero in the ISPCOMIPHERA Awards and he was listed in Internet Magazine's UK Top 50 in both July 2001 and 2002.

- The LINX board is currently seeking to fill the vacancy left by Roland’s departure. Further details can be found at www.linx.net/about/careers/index.html
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"Roland has made a truly unique contribution not just to LINX but to the whole of the Internet industry" - John Soutter.

Roland joined LINX as the organisation’s first full time regulation officer in 1999 and was promoted to his present post in 2001. For several months he acted as interim chief executive during the recruitment process which led to the appointment of present CEO John Soutter.

During his time at LINX Roland has been involved in some high profile ‘lobbying’ in support of the Internet industry’s position on issues such as the Regulation of Investigatory Powers Act, the Communications Data Protection Directive and the Communications Act.

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LINX welcomes OFCOM approach

The government's proposed powers for OFCOM, the new super-regulator for the UK broadcasting and communications industries, have been set out in the Communications Bill.

LINX has welcomed the general direction of government policy with regard to OFCOM's regulation of the Internet.

The Bill's notes say: "The aim of these provisions is to provide, broadly, to maintain licensing obligations in respect of services which are or are capable of broadcasting, while excluding Internet services such as web sites or web-casting from OFCOM's regulatory powers."

'Delivered over the Internet' only includes the impression given to consumers, a definition of IP conveyance. Common sense is expected to apply and LINX expects that only things like webcast versions of TV programmes would be covered by OFCOM.

LINX director of public policy Roland Perry said: "The government plans to restrict OFCOM's involvement in Internet content to explaining to consumers that the Internet is unregulated and suggesting they educate themselves about ways to mitigate any adverse effects. Consumer groups feel this isn't good enough and want to see the role of OFCOM strengthened.

'We need to monitor the progress of the legislation to see that government does not weaken and open up the possibility of rules on content monitoring.'

The timetable for the Communications Bill should see it become law by July, although the latest information is that this schedule may not be met. Transition arrangements are expected in the autumn as regulatory activities are transferred from OfTEL to OFCOM.

Meanwhile, existing regulator OFTEL's recent guide to the new regulatory framework for telecoms service providers will soon be complemented by one for ISP's.

Best practice package launched

The Home Office earlier this year launched a package of 'models of good practice' for ISPs.

The models have been written by the government's Taskforce on Child Protection on the Internet, which includes representatives from government, the UK Internet industry, child welfare organisations and the police. Director of public policy Roland Perry represents LINX on the taskforce.

The models give advice to providers of Internet content and services which offer chat, instant messaging and web-based services. They recommend steps to follow to make these services safer for children.

Publication of the best practice models was timed to coincide with the start of the second phase of the 'safer surfing' awareness campaign.

For the first time this £1 million advertising campaign featured television advertising, which ran throughout January, supported by radio and on-line advertising and sponsorship activity. It is aimed at encouraging parents to make sure their children understand the dangers of communicating with strangers on-line and will equip them with the skills and confidence required to address the issue of grooming activity with their children, without demonising the Internet.

The campaign will build on last year's success, which resulted in an 11 per cent increase in awareness among children to not give out their personal details online and a 12 per cent increase among parents of safety measures for children using the Internet.

Roland Perry said: "Industry involvement in drawing up these best practice models and the safer surfing campaign has underlined our commitment to ensuring that the on-line hazards are minimised as far as practically possible. It is a self-regulation approach which avoids unnecessary legislation."

A separate report on Spam, compiled by a sub-group of the main task force which is chaired by Roland Perry, has been completed but will not be published until later in the year.

LINX plans partnership scheme

LINX members are to consider plans for a partnership scheme under which companies not eligible to join the organisation could become partners.

Partner companies would be able to attend LINX meetings and events. They would have to obey the same rules of confidentiality as members but would not be able to vote.

They would benefit from such things as space on a LINX partner website, the opportunity to use a new LINX partner logo, coverage in HotLINX and the opportunity to meet and mix with members.

In return, they would pay an annual fee to LINX and provide LINX members with opportunities to develop new business relationships.

LINX sales and marketing manager Vanessa Evens said: "Members and partners all stand to benefit - and so does LINX collectively, not least from the additional revenue stream of partnership subscriptions."

Members will be asked to vote on the proposal at the LINX 41 meeting in May.
Facing the future from strong position

LINX – already by far the largest and most sophisticated Internet exchange point in Europe – is determined to maintain its leading position, says chief executive John Souter in his annual report for the year ending September 2002. He says LINX is financially sound with a strong, competent staff and that equipment upgrades mean it is well placed to deal with rising traffic volumes for the foreseeable future.

The year was “a successful period” for LINX, he says, with the opening of a ninth site at Redbus Sovereign House, the “de-meshing” of the network into two distinct networks based on Foundry and Extreme equipment and the deployment of 10 gigabit Ethernet (10GigE) blades on Foundry equipment.

Work is now proceeding on the installation of 10GigE blades on Extreme equipment, following the adoption of WDMI technology at the Telehouse co-location site as an interim solution.

Maximum aggregated traffic volumes almost doubled from 10 gigabits per second in October 2001 to 19 Gb/s in September 2002. By February 2003 volumes were hitting 26 Gb/s.

Twenty-five new members joined LINX during the year but, following consolidations and terminations, this resulted in a net increase of four to give a total membership of 127 at the end of September. The drive to recruit additional members is continuing through media relations, exhibitions, conference speaking engagements and event attendance.

There was also an upturn in the number of 16G ports in use at LINX over the year, from 82 to 106, while the number of 100M ports declined slightly from 169 to 155.

A Network Monitoring project is being introduced to prevent unauthorised overload of the exchange and another engineering project is progressing to safeguard continuity of service against power outages at co-location centres.

LINX started its new financial year in a comparatively strong financial position with cash reserves enabling it to address the many engineering challenges created by continued traffic growth. This can be done without making exceptional calls for financial support from members and without taking on loan finance.

“This strong position also enables us to propose a budget for 2002/2003 with a zero percent margin of income over expenditure, enabling the comparatively high continuing capital expenditure to be achieved without substantially increasing the fees,” says John.

During the year the LINX staff team was strengthened with the promotion of Hugh Spencer to become IT and training manager, taking responsibility for the IT team based in Peterborough, as well as continuing to support the LINX training initiative.

Brenda Mallenfeldt joined LINX full-time as a senior project engineer, following his successful internship on a security project, and Halima Yasin was recruited as an engineer. Michael Lewis joined as management accountant, replacing Carole Cole, who left to run a hotel in Ireland. As a result, LINX now has 21 full-time and one part-time staff.

Another important development was the acquisition of a permanent London office at Tolloy Street, which provides staff accommodation, hot-desks for visiting staff, a meeting room, a press/sales room and a small machine room where equipment can be tested.

One of the year’s most significant developments was the authorisation of a fairly substantial change in LINX fees for the future, says John. The joining fee was halved from £10,000 to £5,000 and the overall pricing scheme now scales better and is fairer to smaller members. This offers the prospect of greater economies of scale and the impact of the changes will be a major topic for next year’s annual report.

The LINX Board remained substantially constant in membership throughout the year, with Raza Rizvi replacing Heather Islip at the 2002 AGM election.

LINX conducted its first comprehensive membership survey during 2002 and, while there were no major surprises, it provided valuable feedback. A further survey is planned in 2003.


Keynote speaker Paul Voxx, a founder of the Palo Alto Internet Exchange (PAIX) in the USA, said: “European operators have a cultural advantage as far as learning how to communicate and trade across cultural and even language boundaries.”

LINX director of public policy Roland Perry was heavily involved in a number of regulatory issues, primarily dealing with law enforcement and child protection.

Similarly, Hugh Spencer was heavily involved in the development of the LINX accredited Internet technician (LAIT) and engineer (LAIE) qualifications. Work is progressing on the commissioning of a LAIT Master examination for the current financial year. It is also hoped to restart the LAIE initiative.

LINX backs IWF funding appeal

LINX is backing an appeal from the Internet Watch Foundation (IWF) for a wider range of ISPs in the UK to help secure its financial future.

Peter Robbins, chief executive of IWF, has written to the chief executive of every UK based member to ask them to subscribe to a direct relationship basis. His move has been backed by LINX as part of its policy of support for the foundation.

LINX was one of the founders of IWF when it was established six years ago and is still a major funder. Last year LINX members voted to encourage more individual ISPs to take a role in the financing and running of IWF.

Home Office Minister Hilary Benn MP launched an active fund raising campaign for IWF in 2002. Since then, mobile phone operators and other like-minded companies have helped to support IWF. However, the demands on the organisation continue to increase, and as more cases come to light where child abuse images have been illegally distributed and downloaded from the Internet.

Peter Robbins’ letter to LINX members says: “We need to put even more effort into combating the availability of abusive images of children on the Internet, whilst assisting service providers to avoid the exploitation of their products by criminals engaged in the distribution of child pornography.

“The government’s position is absolutely clear; they assert the IWF is to be funded by the Internet community as a social responsibility to provide to Internet consumers that the industry is playing its part in combating the flow of child abuse images on the Internet.”

LINX chairman Grahame Davies said: “IWF started with just eight funders and now has more than 20. However, this broadening of its funding base within the Internet industry needs to continue if we are to be truly supportive of the work which it is doing.”

The IWF’s funding appeal to LINX members is based on the assumption that if every UK LINX member were to subscribe on a direct basis (with large companies paying £20,000; medium companies £5,000; and small ones £500) then the IWF could meet the demands currently being made of it.

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LINX continued its membership of and support for Euro-IX - the association of European Internet exchanges - during 2001/2002, culminating in the first Euro-IX forum in Barcelona in September. Keynote speaker Peter Visco, a founder of the Palo Alto Internet Exchange (PAIX) in the USA, said: "European operators have a cultural advantage as far as learning how to communicate and trade across cultural and even language boundaries."

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Value-added services improve profit potential

With stiff competition and aggressive pricing policies hitting profit potential for ISPs and telecoms carriers, European Computer Telecoms (ECT) offers cost effective products that combine the benefits of the Internet with existing voice services to provide a range of intelligent value-added customer services.

As a result, customer loyalty is enhanced and profit streams are increased with a rapid return on investment. Customers can operate their services over the Internet and have the same ease of use with an even larger performance capability without having to invest in the technology themselves.

ECT's next-generation switching solutions are based on open-standard, Internet-capable softswitch and computer technology. Its portfolio includes softswitches such as AutoCarrier®, MediaCarrier® and AccessCarrier® plus the intelligent-network solution INTELEC®.

Launched in 1998, AutoCarrier® - a softswitch with an IP backbone - has advanced architecture that permits a large number of unique web-based value-added services to be realised quickly and easily. An Internet service provider can therefore enhance its presence as an application service provider (ASP) with a broader offering of intelligent value-added services.

The website services can be easily customised to harmonise with relevant corporate identities. New features can also be added on request, creating innovative and intelligent next-generation communication services to provide an integrated sales and service channel running directly from the AutoCarrier® web server to the customers and resellers at home and at the office.

Once customers have acquired their access rights, they can configure their value-added services directly on their PCs by means of a specially designed website.

Teleconferencing

The AutoCarrier® softswitch allows customers to book and convene teleconferences, as well as control a variety of features in real time, offering greater economy with higher capacity and functionality than proprietary conference links. Between three and several thousand participants can be integrated into a single conference, using residential, event or business locations.

Voice-based Internet calls are immediately converted into a revenue generating service for ISPs. Additional value-added services that can be realised on the AutoCarrier® softswitch include service numbers, prepaid Internet, audio and text services.

Personal number service

The AutoCarrier® softswitch can transfer calls to different numbers, at different times of the day and on different days of the week, for people who want to reach on a single number any time and anywhere. A call is not picked up by any of the configured numbers, the caller can leave a message through the unified messaging system. Special functionality - such as a blacklist, a white list and automatic call acceptance - can be easily added.

Following its launch, AutoCarrier® was hailed as the "best leading-edge product" and "best of show" at Voice '98.

Founded in 1998 in Munich, ECT opened a sales and service centre in the UK in 1999 and established a UK subsidiary in 2002. Further sales and service centres are located in Paris, Strasbourg, The Hague, Brussels, Vienna and Helsinki and there are long-term plans for a subsidiary in Australia to serve the Asia-Pacific market.

The company's customers include well-known tier-one carriers such as Deutsche Telekom and British Telecom (BT) as well as up-and-coming new carriers.

**Web-based value-added services offer the following advantages:**

- Customer loyalty and winning new customers
- New sales and profit streams
- Short ROI cycles
- Simple implementation and operation
- Integration of resellers and customers via the Internet

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LINX members are to be asked to consider a plan for extending the services which LINX provides for private connections between networks.

A private interconnection (PI) service for members in Telehouse was launched in 2001 and there are now 15 members making use of this facility. Now some members would like similar private interconnection services between different LINX sites.

LINX already offers a PI service between the two Telehouse buildings but this is the closest it has yet come to an inter-site service.

"This has always been a difficult area for LINX because there is a danger that providing PI means we are competing with our own members," said LINX chief executive John Souter. "But a survey of members' views and discussions at members' meetings has indicated that this should not necessarily act as an inhibitor."

Offering a PI service has benefits to LINX as well as to the members that take advantage of it. The transfer of large traffic flows from the public exchange onto PI has had some effect on the dramatic growth of LINX public peering traffic, which in turn means that the capital expenditure necessary to keep up with this can be reduced or deferred. Extending PI services to inter-site connection would enhance this benefit.

A number of options for inter-site PI are now being considered. The most likely route - if members decide they wish to take forward this idea - is to install LINX's passive optical distribution frame or ODF approach into additional sites.

Existing third-party fibre networks between them would be used to carry traffic, rather than install additional LINX-owned fibre links. LINX would then effectively become a broker or reseller of fibre interconnects from the ODFs to wherever members wanted to go.

This would offer a number of benefits over alternative solutions - including much lower capital costs and the ability to offer a wide range of service options.

John Souter added: "A simple look at our traffic clearly establishes that we are only really talking about the six Docklands sites (two each at Telehouse, Telegy & Redbus). Of course, this also makes it easier, since they are all in sight of each other.

"We would have to think carefully about the broker/reseller mechanism, but we would do this on an open and fair basis, and perhaps restrict the opportunity exclusively to LINX members to bid to be the supplier of each connection."

"What LINX would actually be doing in such a situation is not directly competing with the carrier members but facilitating access to their inter-site capacity."