

# **LINX UK Local Exchanges**

30 October 2013  
Trex.fi Workshop

# LINX UK Local Exchanges

- A presentation in two parts
  - Background on LINX
  - The LINX UK-wide Peering Initiative

# Background on LINX

- Established: 1994
  - A not-for-profit mutual Internet exchange
    - One of the three largest in the world
  - More than 480 members
  - 80% of the global routing table visible @LINX
  - More than 7Tb/sec of connected capacity
  - Peak traffic (public+private) >3Tb/sec

# LINX: Dual Mission

- To facilitate Internet interconnection, especially through public peering
- To represent the interests of our members in matters of public policy

As a neutral, mutually owned membership association

# LINX in Practice

- Commercially strong, growing fast
- 10 points of presence in London data centres (connected together by LINX)
- Two networks in London, powered by equipment from Juniper & Extreme
- New local exchanges
  - IXManchester
  - IXScotland
  - LINX NoVA (North Virginia, USA)
- Around 45 staff in two offices

# LINX Public Affairs

## LINX Public Affairs

Legal & Political News Affecting ISPs and Internet Users

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**October 15th, 2013**

## City of London police attempt domain takedown without court order

DNS, Law enforcement

Reports surfaced last week that the City of London police have attempted unilaterally to secure the takedown of a domain associated with a website accused of copyright infringement. No charges have been brought against this website, and no court order has been obtained at the time of writing.



Last week, EasyDNS received a domain suspension request from the City of London (UK) Police Intellectual Property Crime Unit. The email threatened to refer the EasyDNS to ICANN, and asked that they redirect the domain to the IP address 83.138.166.114, which at the time of writing contains the following notice.



You have tried to access a website that is under criminal investigation by the UK:

**Police Intellectual Property Crime Unit (PIPCU)**

This site is being investigated for online copyright infringement.

For a safe and reliable guide to online content, please visit:



### UK LEGISLATION

- [Anti-terrorism, Crime and Security Act 2001](#)
- [Communications Act 2003](#)
- [Computer Misuse Act 1990](#)
- [Copyright, Designs and Patents Act 1988](#)
- [Criminal Justice & Public Order Act 1994](#)
- [Criminal Justice and Immigration Act 2008](#)
- [Data Protection Act 1998](#)
- [Digital Economy Act 2010](#)
- [Obscene Publications Act 1959](#)
- [Obscene Publications Act 1964](#)
- [Police and Justice Act 2006](#)
- [Privacy and Electronic Communications \(EC Directive\) Regulations 2003](#)
- [Protection of Children Act 1978](#)
- [Regulation of Investigatory Powers Act 2000](#)
- [Sexual Offences Act 2003](#)
- [The Electronic Commerce \(EC Directive\) Regulations 2002](#)
- [Video Recordings Act 1984](#)

### EU LEGISLATION

- [Audiovisual Media Services Directive](#)
- [Child Sexual Abuse Directive](#)
- [Data Protection Directive](#)
- [Data Retention Directive](#)
- [E-Commerce Directive](#)
- [Intellectual Property Rights Enforcement Directive](#)
- [Telecoms: Access Directive](#)
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- [Telecoms: Privacy Directive](#)
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OFFICIAL  
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# **LINX UK-wide Peering Initiative**

# LINX UK-wide Peering?

- LINX mission: “keep traffic local”
  - Which, from a UK-vs-the-world perspective, LINX has achieved
  - Previously little or no UK peering outside of London

So can LINX keep traffic 'more' local?



# Why UK-wide Peering?

- Many benefits accrue from this:
  - Keep traffic local (lower latency, lower costs etc.)
  - Reduce dependency on London
  - Boost for local network operators
  - Boost for local economy around exchanges

## So what have LINX done so far?

- LINX launched IXManchester in June 2012
  - ~40 members are connected
  - Significant peering traffic
- Consultations in other areas
  - Northern Ireland, East Midlands, Scotland, Birmingham, Wales
- LINX launched IXScotland in October 2013
  - 10 members connected at launch

# IX SCOTLAND

Powered by LINX

# IXScotland

- Located in Pulsant's South Gyle data centre in Edinburgh
  - Previously called Scolocate
- Uses the latest hardware from Extreme Networks enabling all the advance features expected from a modern exchange

# IXScotland Location



# IXScotland Infrastructure

- Will consist initially of a single Extreme Summit x460 Switch
  - 48 x 1G ports
  - 4 x 10G ports
  - Located in Pulsant South Gyle datacentre

# IXScotland Services

- Just like LINX in London:
  - Existing order process
  - 100Mb, 1G, 10G peering ports
  - Ports stats & sFlow
  - Monitoring & OoH NOC
  - [support@linx.net](mailto:support@linx.net)
- And to come:
  - ConneXions partnership scheme
  - Private interconnect

# Pricing in Scotland

- Single membership fee
  - No matter how many LINX exchange networks a member connects to
- Port fees
  - No charge of 10G orders for first six months of operation
  - No charge for 100Mb & 1G ports until the end of 2015
  - Pulsant offering free cross-connects on first 20 orders



# LINX Resources

- IXScotland mailing list
  - [IXScotland@linx.net](mailto:IXScotland@linx.net) (local community discussions)
- Traffic graph (public)
  - <https://stats.linx.net>
- Looking glass (public):
  - <https://linx.net/pubtools/looking-glass.html>
- Prices, other resources, etc:
  - <https://www.linx.net/service/publicpeering/ixscotland.html>

# **LINX UK-wide Peering Initiative**

## **The Future**

# Where Next?

- This will be demand driven
  - Needs a local community of interest
- Geographic considerations
  - Discussions with many areas ongoing
    - Liverpool, Birmingham, East Midlands, South East etc.
- Will need local data centre operator support

# LINX Approach

- Use the established LINX membership structure
- Respect local 'ownership need'
- Keep it simple and straightforward
- Take the long term view about economic viability
- Separate stand-alone exchanges
  - Not connected back to London

# Exchange Template

- Sales, billing, admin
  - Existing process to order ports etc.
  - Single bill, no new agreement to sign
- Engineering support
  - Lessons learnt from LINX's 2008 new PoPs project
  - [support@linx.net](mailto:support@linx.net)
- Infrastructure
  - 'LINX in a rack' (switch, monitoring server, route server, management network)

## LINX in a Rack

Optical distribution frame

Route server/route collector

Monitoring server/stats/sFlow server

Site management router

Console server

Peering switch/router

Copper cable tray

# Exchange Template

- Architecture
  - Most to start with a single PoP
  - Potential to expand to more connected sites in the longer term
- Local guidance is important
  - Each new exchange will need a local community of interest to guide and nourish it
  - Support from local data centres required

# Questions