

The LINX UK-wide Peering Initiative

Prague – May 2014

Agenda

- A little bit about LINX
- Regional Peering
 - Initiative
 - What have we done?
 - Challenges

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A little bit about LINX

- Established: 1994
 - A not-for-profit mutual Internet exchange
- One of the three largest in the world
 - More than 515 members
 - 80% of the global routing table visible @LINX
 - More than 8Tb/sec of connected capacity
 - Peak traffic (public+private) >4Tb/sec

LINX: dual mission

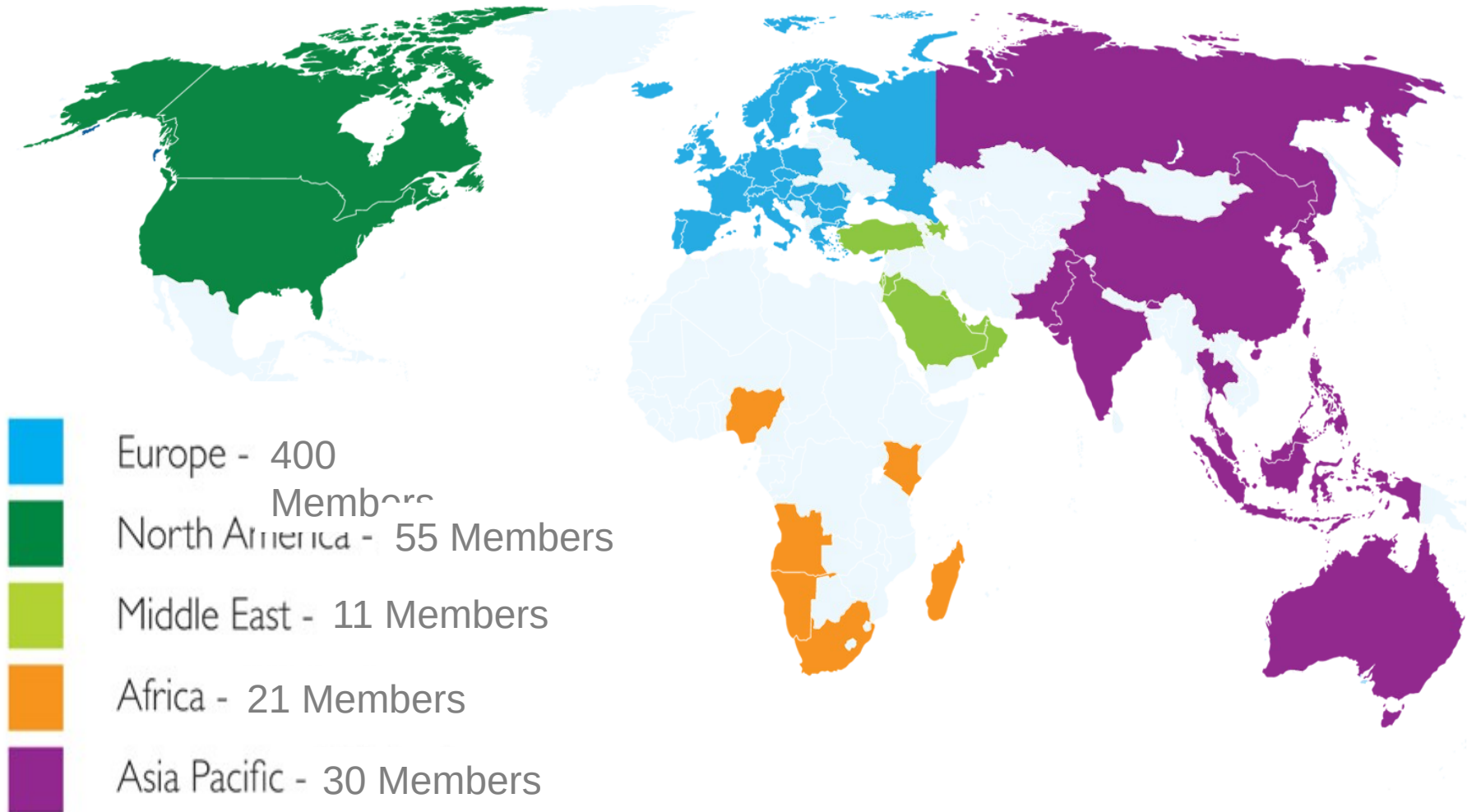
- To facilitate Internet interconnection, especially through public peering
- To represent the interests of our members in matters of public policy

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 exchanges in Manchester & Edinburgh
- Three datacentre exchange in North Virginia (LINX NoVA)
- Around 48 staff in two offices

International LINX



LINX Public Affairs



Public Affairs

Legal & Political News Affecting ISPs and Internet Users

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Internet governance

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- Law enforcement - liaison

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November 26th, 2012

EU Parliament opposes ITR scope expansion

Europe, International, Internet governance

The European Parliament has passed a **resolution** expressing opposition to proposals which would extend the International Telecommunications Union's (ITU) authority to include the Internet.

The European Parliament

...

3. Believes that the ITU, or any other single, centralised international institution, is not the appropriate body to assert regulatory authority over either internet governance or internet traffic flows;
4. Stresses that some of the ITR reform proposals would negatively impact the internet, its architecture, operations, content and security, business relations and governance, as well as the free flow of information online;
5. Believes that, as a consequence of some of the proposals presented, the ITU itself could become the ruling power over aspects of the internet, which could end the present bottom-up, multi-stakeholder model; expresses concern that, if adopted, these proposals may seriously affect the development of, and access to, online services for end users, as well as the digital economy as a whole; believes that internet governance and related regulatory issues should continue to be defined at a comprehensive and multi-stakeholder level;

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
Telecoms: Framework Directive
Telecoms: Privacy Directive
Telecoms: Universal Service Directive

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UK-wide peering?

- LINX mission: “keep traffic local”
 - Which, from a UK-vs.-the-world perspective, LINX has done
 - But there is little or no UK peering outside of London
- So can we keep traffic **more** local?

Why UK-wide peering?

Many benefits accrue from this:

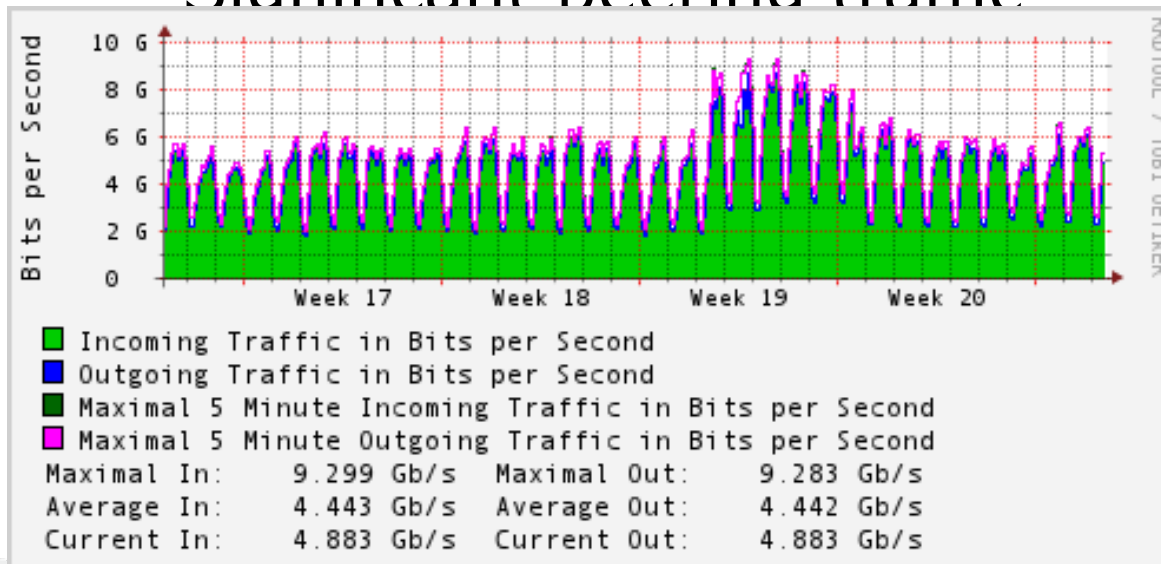
- Keep traffic local
(lower latency, lower costs etc.)
- Reduce dependency on London
- Boost for local network operators
- Boost for local economy around exchanges

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So what have we done?

- We launched IXManchester in June 2012
 - ~50 members are connected
 - Significant peering traffic



Where is IXManchester?

- Initially in Telecity Williams House
 - Telecity's generous offer:
 - First 50 orders from Telecity customers receive a free (for ever) cross-connect from Kilburn House to the LINX PoP
- Planning to extend to other locations...



IXManchester services

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



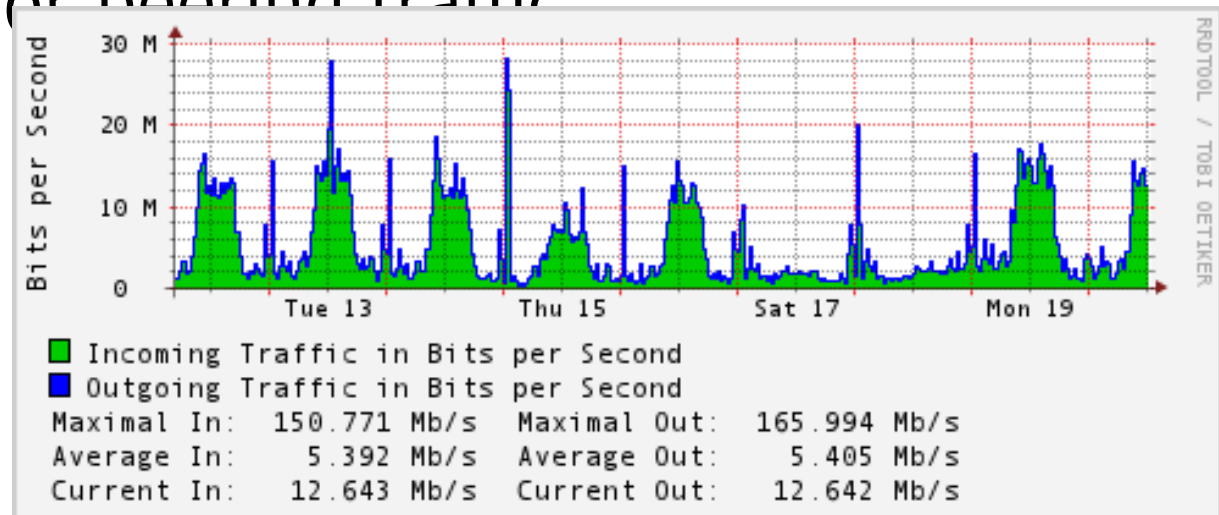
IXScotland

- Consultation led to a single PoP launch in Edinburgh
 - Pulsant's South Gyle data centre
- Went live in late 2013



IXScotland

- We launched IXScotland in September 2013
 - ~12 members are connected
 - Early days for peering traffic



Where next?

- This will be demand driven
 - So needs a local community of interest
- We've had discussions with many more areas:
 - South Wales, East Midlands, Northern Ireland, Liverpool, South East etc.
- Perhaps 10 exchanges in the longer term?
- Will need local data centre operators...



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Style of our approach

- Use the established LINX membership structure
- Respect local 'ownership need'
- Keep it simple & 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 2008 new PoPs project
 - 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
 - Mostly 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...
- Lack of established carrier-neutral data centres:
 - Outside of London, SE England, Leeds and Manchester is a delaying problem



Establishing local viability

- This is the **key** issue
- We are trying very hard:
 - Not to be prescriptive
 - And to take the long term view
- But:
 - It does need a local community of both network content and access providers
 - It does need supportive local data centres

Questions?