

<sup>ltd</sup>  
**Esgob**



**Grant money doesn't buy you happiness**

**Nat Morris - @natmorris**

Monday 20th April 2015 - UKNOF31 Manchester

# Disclaimer

**These are my own views, and are not representative of any organisation or other companies that I am associated with.**

## **Data sources:**

- LINX website: *Looking glass, Port listing (MAC, speeds, etc)*
- RIPE database (querying + alloclist.txt)
- Oregon Route Views
- Companies house (ordered accounts per member)
- Digital Cardiff website (run by Cardiff City Council)
- ixwales mailing list

**All data correct as of Sat 18th April 2015**

# Initial meeting

2nd of October 2013, organised by LINX and Digital Cardiff



## Public Affairs News

Conservatives pledge age-verification for porn sites Budget 2015  
Parliamentary Committee recommends intelligence law overhaul

## Dual LAN Topology Explained

The benefits for networks connecting to both the Juniper and Extreme LANS

## LINX IPv6 Information

## LINX Regional Peering Event - Wales

[E-mail this to a friend](#) [Print this page](#)

### Introduction

LINX, in association with Digital Cardiff invites you to a consultation event at the Wales Millennium Centre on 2nd October 2013.

LINX recently launched its first regional peering point in Manchester and are planning to establish more in a number of other regions where there is significant Internet traffic. This is therefore an excellent opportunity to hear about those future plans but also a chance to network with other interested parties.

### Registration

Registration for IXWales has now closed. Registration was open from 16:15 on Monday 19th August 2013 and closed at midday on Tuesday 1st October 2013. Places were strictly limited. Only 3 people per company were allowed because the venue had a restricted capacity.

### Agenda

The provisional event agenda is as follows:

	Part 1 - Introductory Session	Speaker
12.30	Registration Opens ( <i>refreshments available</i> )	N/A
13.00	<b>Background briefing on peering and Internet Exchanges</b> We will explain how peering works, what the benefits are, and how this is facilitated by an Internet exchange	-
	Part 2 - Main Meeting	Speaker
14.00	Event Start	-
14.00	<b>Introduction:</b> The importance of an Internet Exchange to Wales? ( <a href="#">PDF</a> )	Steve Durbin
14.15	<b>Local factors:</b> a summary of the current situation ( <a href="#">PDF</a> )	Giles Phelps
14.50	<b>Keynote presentation:</b> The LINX regional peering initiative ( <a href="#">PDF</a> )	John Souter



~ 25 in attendance, we had tea and coffee, plus Welsh cakes





# Start of an exchange point

- BT Stadium House / Empire Exchange - obvious location  
[SWCFATE](#)



# Start of an exchange point

- Initial discussions about starting a community run IXP
- Cardiff City Council keen to accelerate the process, **Digital Cardiff** programme already underway - DCMS money to be spent.
- May 2014 - announced by LINX that they would securing rackspace within the BT Exchange/DC to host the IXP. [Nice work!](#)
- mid-May 2014 - Cardiff City Council / Digital Cardiff announce a grant, administered by the council funded by the DCMS.
- June 2014 - LINX press release

Media, broadcasting,  
Olympics, tourism, leisure  
*£1.4bn/yr budget*

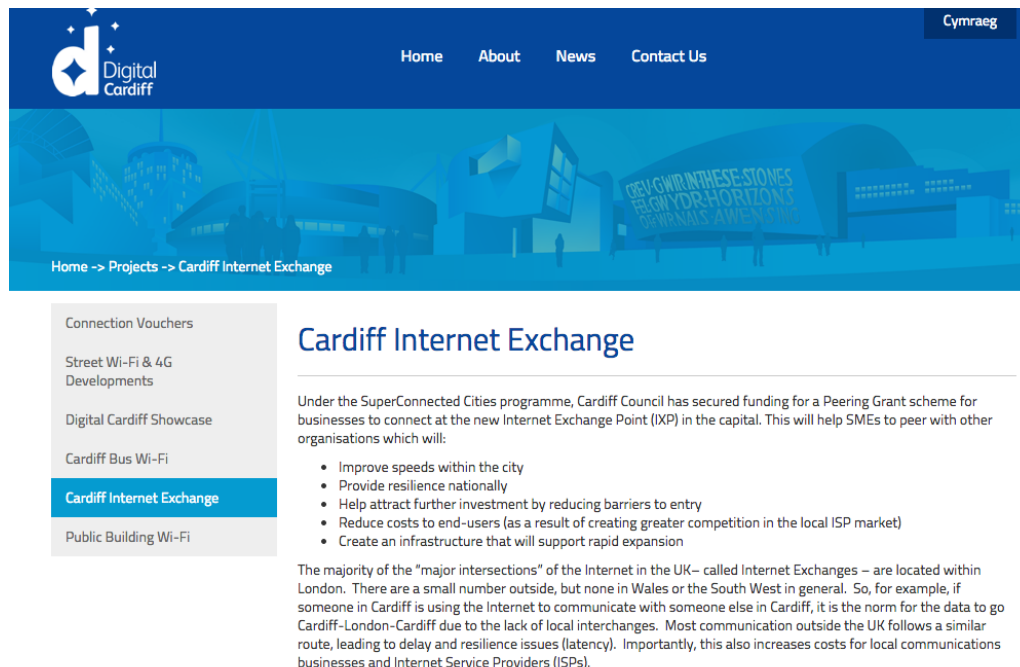
# Cardiff Capital Peering Grant

- Guidance notes:

[http://www.digitalcardiff.net/uploads/v4\\_Capital\\_Cardiff\\_Peering\\_Facility\\_Grant\\_Guidance\\_Notes\\_v4\\_0.pdf](http://www.digitalcardiff.net/uploads/v4_Capital_Cardiff_Peering_Facility_Grant_Guidance_Notes_v4_0.pdf)

- Application form:

[http://www.digitalcardiff.net/uploads/Capital\\_Cardiff\\_Peering\\_Facility\\_Grant\\_Application\\_Form\\_V3\\_0\\_ENG.pdf](http://www.digitalcardiff.net/uploads/Capital_Cardiff_Peering_Facility_Grant_Application_Form_V3_0_ENG.pdf)



# From the guidance notes... T&Cs

## 1. AM I ELIGIBLE TO APPLY?

To be eligible for Peering Grant funding under this Scheme you must fall into the category of an SME as follows:

(a) You must be a Small or Medium Sized Enterprise (SME) as defined by the European Commission:

- You employ between 1 and 249 persons
- You have an annual turnover not exceeding €50 million OR
- You have an annual balance sheet total not exceeding €43 million.

If you are a start-up or pre-start-up business, you are eligible to apply.

Charities, Social Enterprises, Community Interest Companies (CICs), SOHO's and sole traders can also apply as long as they meet the above criteria.

(b) Your business must be located within Wales or the South West of England to be eligible for the scheme. If you are located outside of this area and are interested please contact the team directly to discuss.

(c) You have not already received public sector funding to peer within an Exchange.



# From the guidance notes... T&Cs

(e) Your business must be financially viable at the time you apply and have no outstanding debts to the Local Authority. Cardiff Council reserves the right to re-check the information provided in the application if the period between approval and claim of grant funds exceeds 6 months.

(f) The grant is to represent up to 100% of eligible costs from a minimum of £200 up to a **maximum of £20,000**. If the eligible costs on the quote exceed the **£20,000 maximum**, we would still like to receive your application.

**Come peer, get 20k**



# From the guidance notes... T&Cs

## My Peering Service:

a) As part of this project and funding you must peer in the Internet Exchange.

b) Only one grant can be awarded per business to peer in the Internet Exchange.

**One per legal entity**

c) You cannot use the grant to pay for any revenue services, specifically administration fees, joining fees or any other associated running costs.

**Can't be used to pay LINX / RIPE membership**

d) You must provide evidence of the successful installation of your equipment in the Internet Exchange in order to claim your grant. Further information on this can be found in the payment claim section.

**LINX notify the council that  
you have connected**

# From the guidance notes... T&Cs

## Payment of my Grant

**Show them the invoices and they'll pay up**

(m) Payment of your grant will be made following receipt of paid invoices from you for the capital equipment installed.

(n) The grant will not cover any VAT costs and the invoices should be itemised for ease of identifying the items and associated costs.

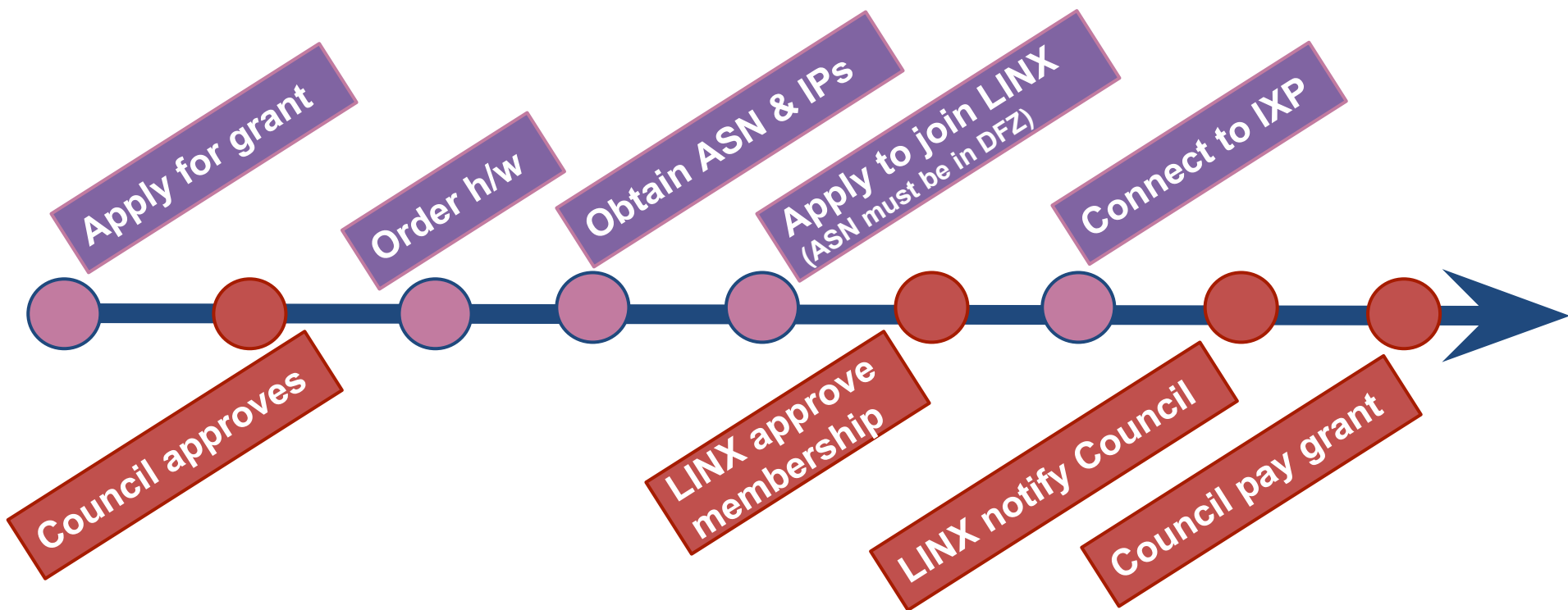
(o) The value of your individual Grant will be confirmed in the Peering Grant Offer Letter, which you will receive if your application is successful. You can claim the actual cost of the capital works or the grant value, whichever is the lower. If the capital expenditure costs are less than the grant offered, you can only claim the actual cost. If the costs are higher than the grant, you will be responsible for paying the difference. The Capital Cardiff Peering Grant scheme is not liable for any payment in excess of the grant amount.

(p) Grants are for the one-off, upfront capital costs to peer within the Exchange. These costs must be reasonable and in line with current market estimates, as evidenced by the quotation requested in the Application. Costs may include router equipment and any other essential technology. Only Capital expenditure which falls within the definition compliant with Public Sector Accounting Regulations can be accepted.

**One off payment only for h/w**

# Grant application process

Applicant

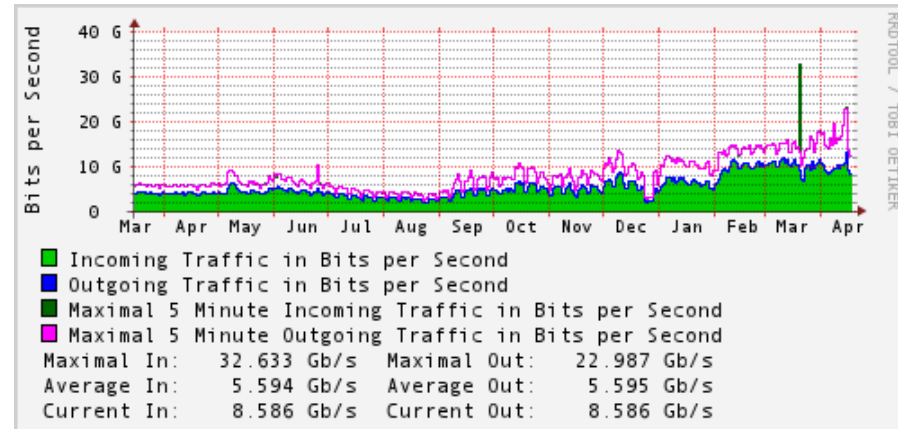
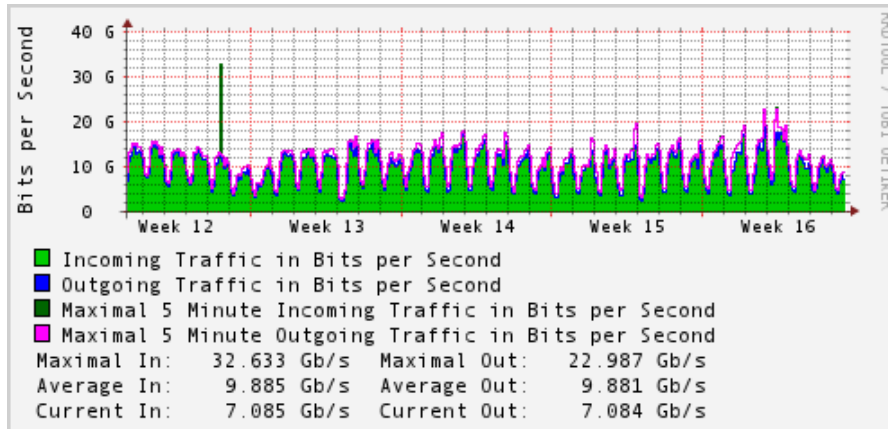


Cardiff City Council / LINX

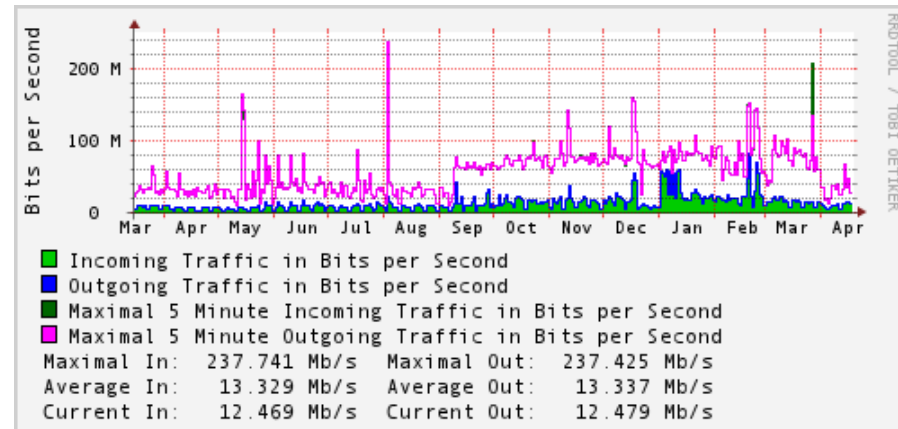
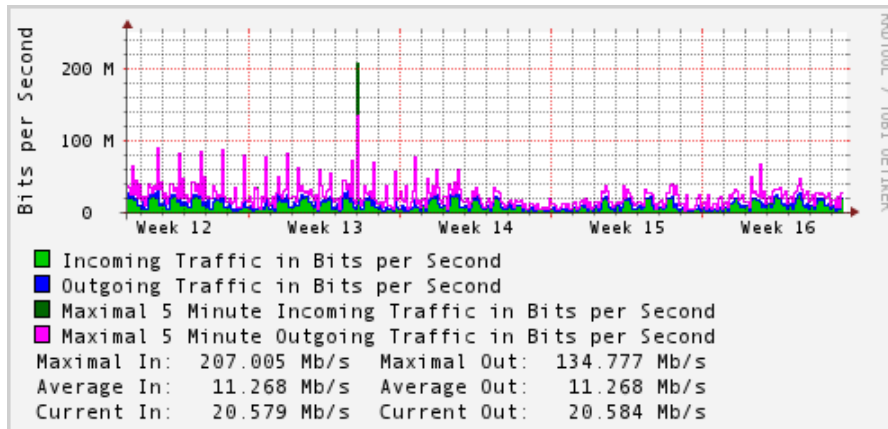
- Informed that LINX never see the contents of the grant application

# Traffic per LINX regional exchange

## Manchester ? members



## Scotland 14 members

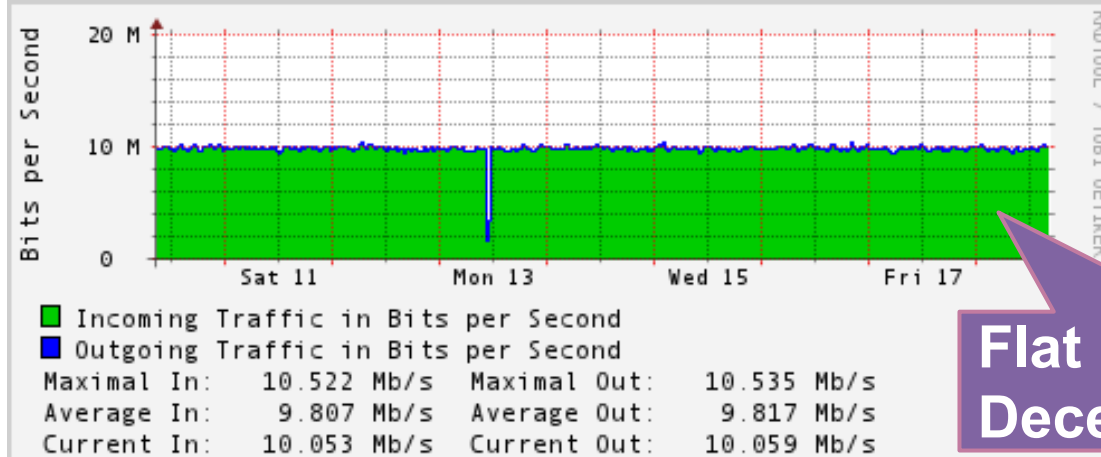
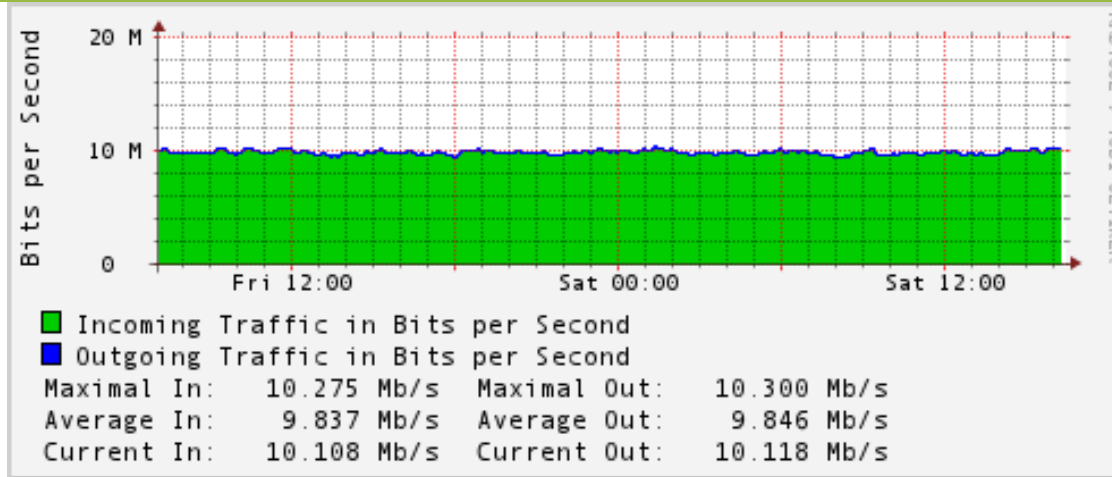


Month

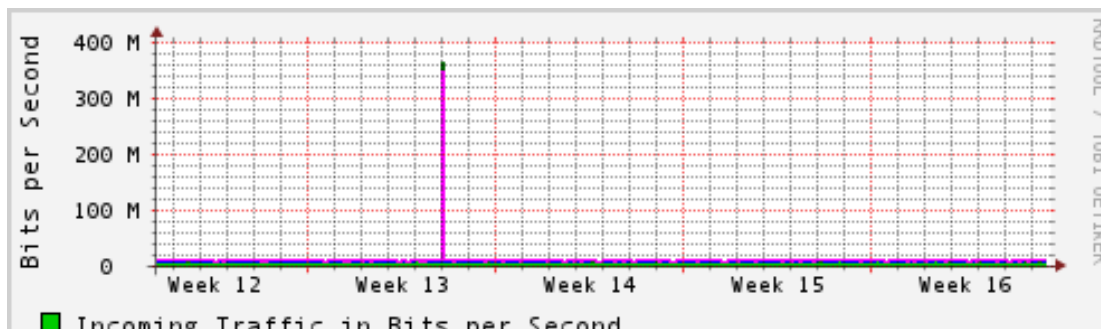
Year

# Traffic per LINX regional exchange

## IXCardiff



Flat 10mbit/s since December

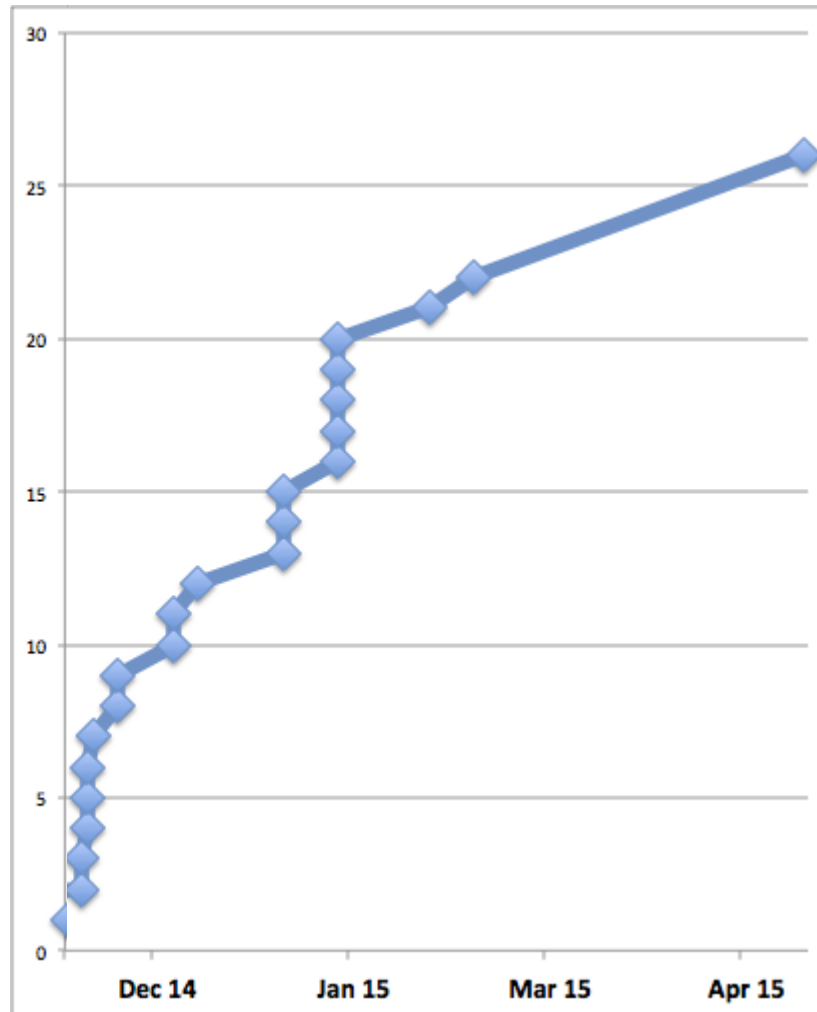




# Growth

**26 connections!**

Connections



Date of LINX 'New member connection' email

# Members joining - Dec 2014

ASN	Joined	PA alloc	Org	Svc	Peering
39537	?	1997	Hub Network Services	1G	peering@hns.net
59455	?	2010	Clearstream Group	10G R	
51048	?	2011	Spectrum Internet	10G R	
31595	?	2004	Datacentres / Redraw	CX 100	noc@redrawinternet.com
51048	?	2011	Next Connex	1G	postroom@nextconnex.com
48294	18th Dec	2008	Spectrum Internet	1G	kevin.herbert@nsuk.com
201299	18th Dec	1st Dec	Principality Document Solutions	CX 100	peering@clearstreamgroup.co.uk
201300	19th Dec	1st Dec	DVS Soft Ltd	CX 100	support@clearstreamgroup.co.uk
201319	19th Dec	25th Nov	Siarad Network Ltd	CX 100	info@siaradnet.com
201320	19th Dec	25th Nov	Meibion Maesycastell Ltd	CX 100	support@clearstreamgroup.co.uk
201189	20th Dec	6th June	Bluewave Internet Ltd	CX 1G	peering@spectruminternet.com
201363	24th Dec	13th Nov	Astrix Integrated Systems	CX 1G	peering@clearstreamgroup.co.uk
201445	24th Dec	2013	Deeplake Wales Ltd	CX 100	peering@clearstreamgroup.co.uk

Full data: <http://esgob.com/cardiff>

# Members joining - Jan 2015

ASN	Joined	PA alloc	Org	Svc	Peering
201317	2nd Jan	25th Nov	Excellence IT UK	CX 1G	peering@clearstreamgroup.co.uk
201357	2nd Jan	14th Nov	Computer Services Group	CX 100	peering@clearstreamgroup.co.uk
201278	6th Jan	4th Dec	Digital Inclusion Ltd	CX 100	peering@clearstreamgroup.co.uk
201207	20th Jan	23rd Dec	Telecomms Facilities Ltd	CX 1G	peering@spectruminternet.com
201219	20th Jan	19th Dec	Films as 59 Ltd	CX 100	peering@spectruminternet.com
210217	20th Jan	19th Dec	On Screen Productions	CX 1G	peering@spectruminternet.com
201216	29th Jan	19th Dec	Method4 Ltd	CX 1G	peering@spectruminternet.com
201353	29th Jan	15th Sep	Net Support UK Ltd	CX 1G	peering@nsuk.com
201354	29th Jan	17th Nov	Communic8 Ltd	CX 1G	peering@spectruminternet.com
201261	29th Jan	9th Dec	Watershed Arts Trust Ltd	CX 1G	peering@spectruminternet.com
201266	29th Jan	8th Dec	At Bristol Ltd	CX 1G	peering@spectruminternet.com

Full data: <http://esgob.com/cardiff>

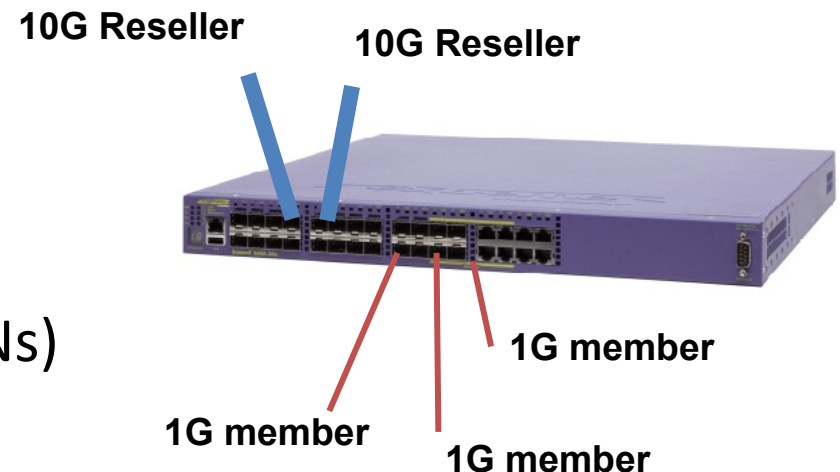
# Members joining - Feb till now

ASN	Joined	PA alloc	Org	Svc	Peering
201255	13th Feb	9th Dec	Chapter Cardiff Ltd	CX 100	peering@clearstreamgroup.co.uk
201066	20th Feb	6th Feb	Simply Managed Ltd	CX 100	peering@clearstreamgroup.co.uk
200856	15th Apr	26th Mar	Object Matrix Ltd	CX 100	peering@spectruminternet.com

Full data: <http://esgob.com/cardiff>

# Observations - LIRs, peering and ports

- **19 new LIRs** established since November 2014
  - 5 known in Wales as of September 2013
  - Only 2 of those have since joined the IX
- 9 peering email addresses (7 orgs)
- Connections:
  - 2 x 10G reseller
  - 3 x 1G
  - 12 x 100mb ConneXions (VLANs)
  - 10 x 1gb ConneXions (VLANs)





# Observations - MAC addresses

25 IXCardiff MACs listed on the LINX website

MACs	Vendor
1	Intel
3	Cisco
10	Juniper
11	Microsoft Hyper V

Sort by “peering mac vendor”

Full data: <http://esgob.com/cardiff>

# Observations

- Bought Companies House info for every member (inc latest filed accounts)
- Same location and board - do they require different routing policies?

ASN	Org	Reg no	Postcode	Directors
201299	Principality Document Solutions	3170260	CF11 9LJ	Director A, Director B, Director C
201300	DVS Soft Ltd	6327157	CF11 9LF	Director A, Director B
48294	Spectrum Internet Ltd	7849485	NP16 5UH	Director D
201353	Net Support UK Ltd	3625793	NP16 5UH	Director D
201354	Communic8 Ltd	7854177	NP16 5UH	Director D
59455	Clear Stream Technology Group Ltd	5853420	CF38 1AF	Director E
201445	Deeplake Wales Ltd	6756924	CF38 1AF	Director E
201278	Digital Inclusion Ltd	8025689	CF38 1AF	Director E

Sort by “Director 1”

Full data: <http://esgob.com/cardiff>

# Observations - Prefix reachability

- 25 prefixes visible on the LINX exchange collector (13 in DFZ, 12 not)

Prefix	ASN	Member	In DFZ
185.25.191.0/24	31595	Redraw	Yes
195.94.112.0/20	39537	Hub Network Services	Yes
185.23.55.0/24	59455	Clear Stream	No
185.25.190.0/24	60787	Datacentres	Yes
185.93.172.0/22	200856	Object Matrix	Yes
185.87.13.0/24	201066	Simply Managed	No
185.82.196.0/22	201189	Bluewave Internet	Yes
185.82.60.0/22	201207	Telecomms Facilities	Yes
185.81.252.0/22	201216	Method4	Yes
185.81.244.0/22	201217	On Screen Productions	Yes
185.81.232.0/22	201219	Films At 59	Yes
185.80.178.0/23	201255	Chapter Cardiff Ltd	No
185.80.132.0/22	201261	Watershed Arts Trust	Yes
185.80.84.0/22	201266	At Bristol Limited	Yes
185.80.14.0/23	201278	Digital Inclusion Ltd	No
185.33.195.0/24	201445	Deeplake Wales Limited	No

Prefix	ASN	Member	In DFZ
185.80.178.0/23	201255	Chapter Cardiff Ltd	No
185.80.132.0/22	201261	Watershed Arts Trust	Yes
185.80.84.0/22	201266	At Bristol Limited	Yes
185.80.14.0/23	201278	Digital Inclusion Ltd	No
185.79.114.0/23	201299	Principality Document Solutions	No
185.79.110.0/23	201300	DVS Soft Ltd	No
185.78.194.0/23	201317	Excellence IT (UK) LTD	No
185.78.170.0/23	201319	Siarad Network Limited	No
185.78.166.0/23	201320	Meibion Maesycastell	No
185.70.32.0/22	201353	Net Support UK Ltd	Yes
185.77.56.0/22	201354	Communic8 Ltd	Yes
185.77.22.0/23	201357	Computer Services Group (CSG)	No
185.77.5.0/24	201363	Astrix Integrated Systems Ltd	No
185.33.195.0/24	201445	Deeplake Wales Limited	No

- Config issue?** of all the prefixes that aren't visible in the DFZ, neighboring /23's and /24's are

Visible on IXP /22

In DFZ



Prefixes tab

Full data: <http://esgob.com/cardiff>

# Key questions

- 20 grants were available, upto £20,000 each  
= **£400,000 total**

## Given the money how would I have spent it?

- Investment in open access fibre
- Community owned wavelengths from Bristol through Newport > Cardiff to Swansea - buying consortium.
- Provided interest free loans for infrastructure that could be repaid over 10 years.
- 
- Rebates for fibre business rates

# Key questions

- £400,000 to participants, not forgetting the additional £200,000 of Council overheads, from [23rd Oct 2014 statement](#) = **£600,000**

CITY OF CARDIFF COUNCIL  
CYNGOR DINAS CAERDYDD

COUNCIL: 23 OCTOBER 2014



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## LEADER'S STATEMENT

### AGENDA ITEM:8

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#### IXCardiff

The new Internet Exchange (IXCardiff) was launched in the city on Wednesday 15 October, which is located in the heart of Central Cardiff Enterprise Zone. The new Internet Exchange forms part of the digital transformation of Cardiff as one of the UK's 'Super Connected Cities'. To this end, the UK Government has allocated up to £6.78m to upgrade the city's digital infrastructure and the **£600,000** investment to connect SMEs in Cardiff to the new exchange is a central part of the programme. The development of IXCardiff will ensure that Cardiff becomes digitally connected and will provide a massive incentive for financial and creative industries to locate their business in Cardiff and the wider Cardiff Capital Region. It will help give the city a competitive advantage and reduce dependency on London by enabling business to connect directly to an Internet Exchange here in Cardiff; giving the benefit of lower overheads, improved internet speeds and increased online capability.



# Key questions

- Is this a sustainable IXP?
- As only capital h/w costs are covered by the grant, who will still be connected in 1, 2, 5 years?
- Has it attracted members from outside of the region?  
(BT “promised” to peer with the first 20 members)
- Will it reduce the bandwidth costs of participants?

# Key questions

## Questions for Cardiff City Council and the DCMS...

- How much **public money** was distributed?
- Apart from validating invoices, what other due diligence took place?
- Who has been onsite to verify delivery of equipment?
- Which industry subject matter experts were consulted to review applications?  
(i.e. Not the Council IT or audit departments)

# Questions?

Full data: <http://esgob.com/cardiff>

<https://nat.ms>  
**@natmorris**

