European IXP Update

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UKNOF 9 - 13th January 2007

What is an IXP

- Allows operators to exchange traffic with LARGE numbers of other networks on the internet on a SMALL number of cross-connects.
- Benefits to operators include reduced cost, reduced latency, increased capacity, opportunities to sell services across the exchange, community assistance.

Euro-IX

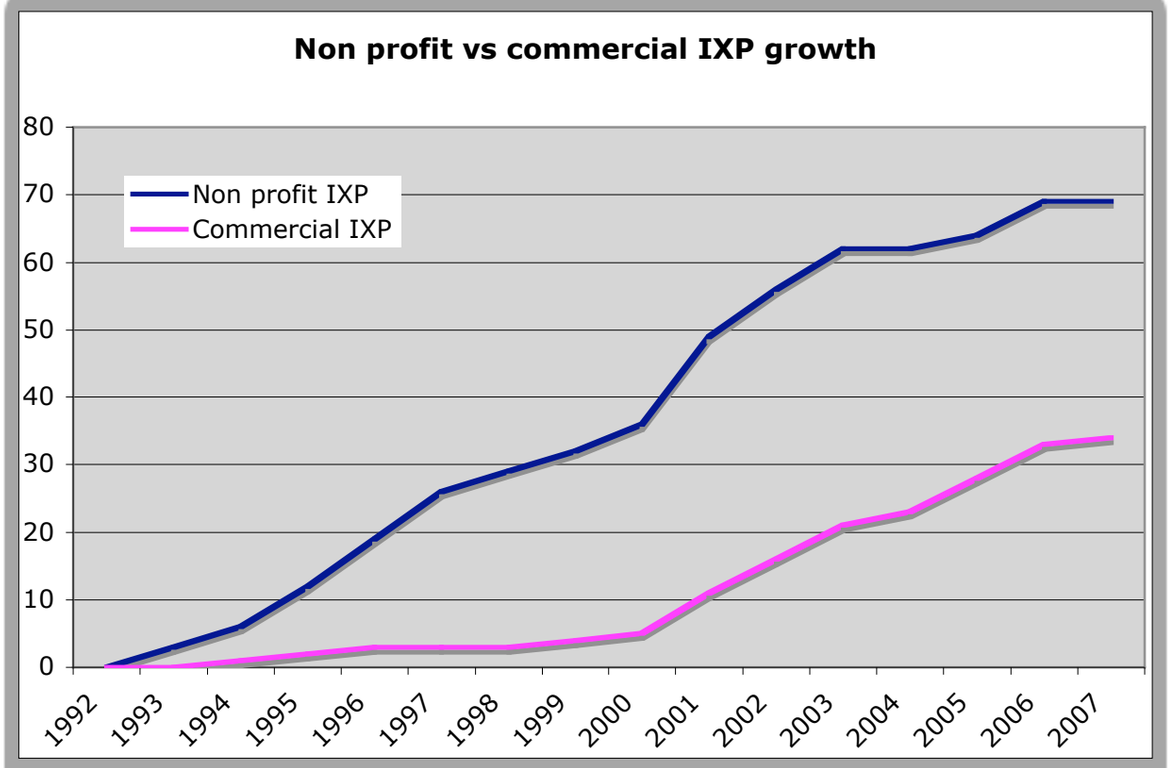
- IXPs are represented in Europe by Euro-IX, an association that promotes the sharing of knowledge, research and data between IXPs.
- The aggregate data in this Presentation comes from Euro-IX research, we thank Serge Radovcic.

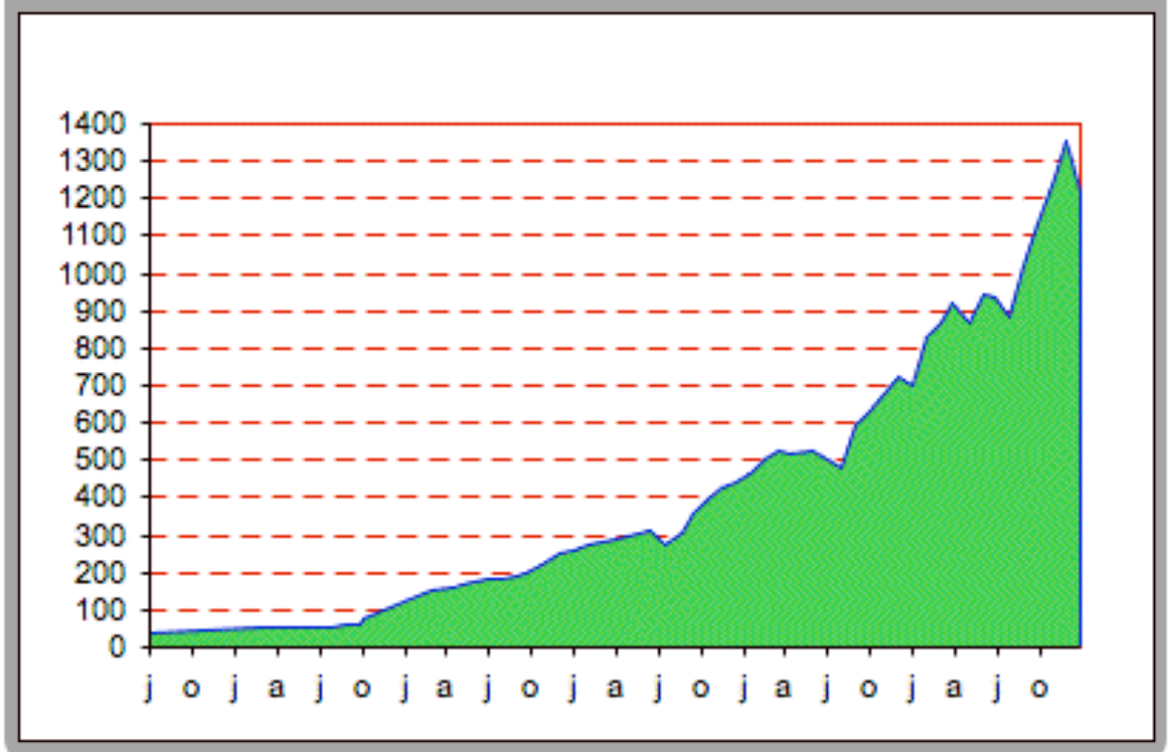
IXPs in Europe

- Euro-IX can identify 103 IXPs in 96 cities in 31 countries of Europe.
- 8 in UK (LINX, LONAP, LIPEX, MaNAP, MCIX, MerieX, PX, RBIEX) - UK6x closed at the new year.
- 1993 - 3 IXPs in Europe. 1999 - 36.

Mutuality

- Vast majority of European IXPs are mutual - owned by members.
- “Big 3” who account for >900Gbit of peak traffic all mutual.

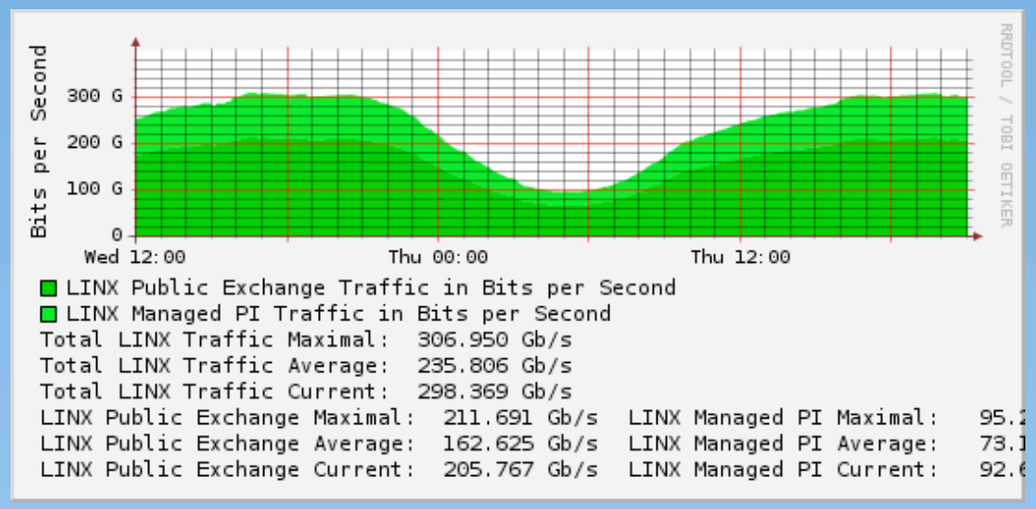




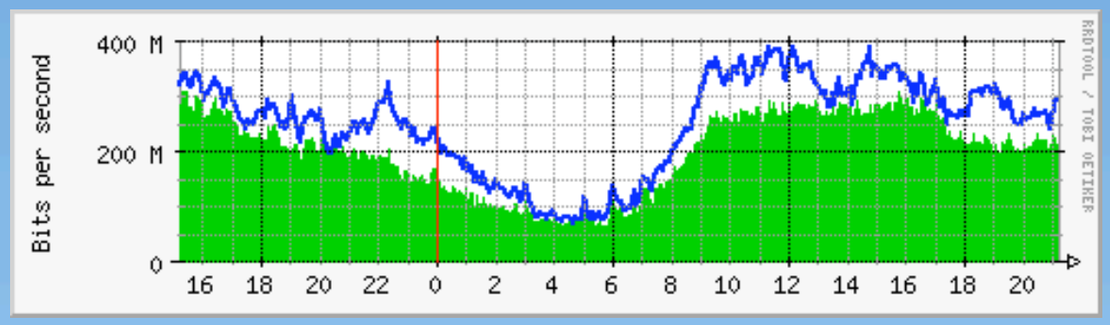
It’s published in the Communications Act that an IXP operator mustn’t offer a presentation without including at least twelve traffic graphs.

London Peering

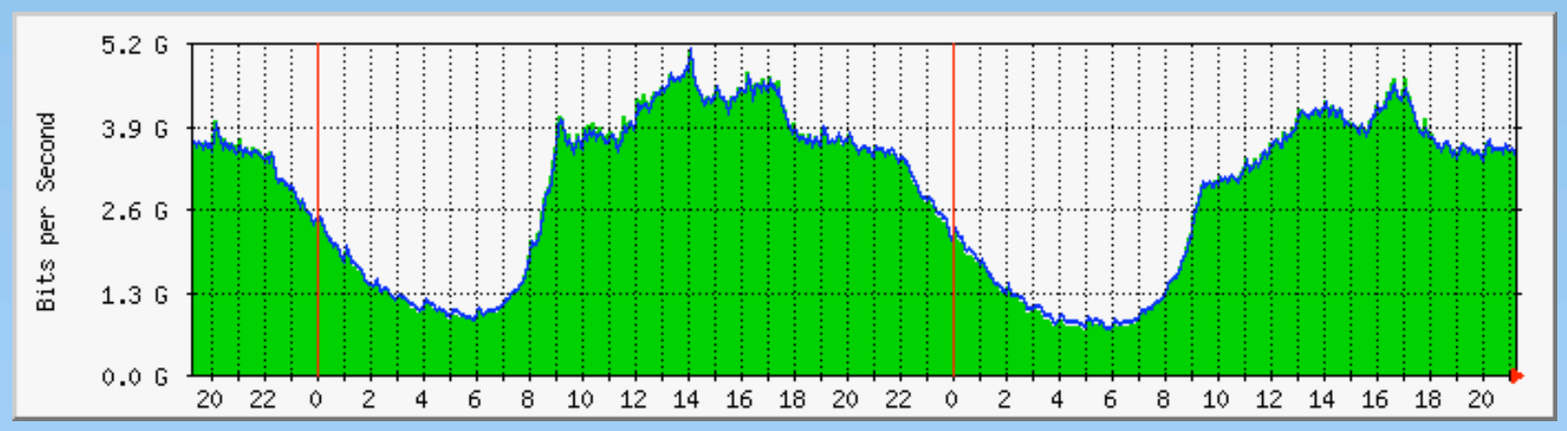
LINX



LIPEX

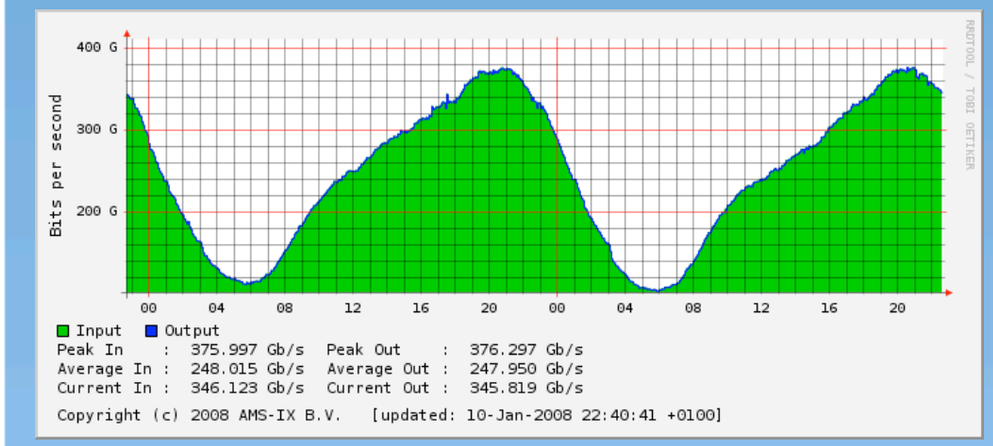


LONAP

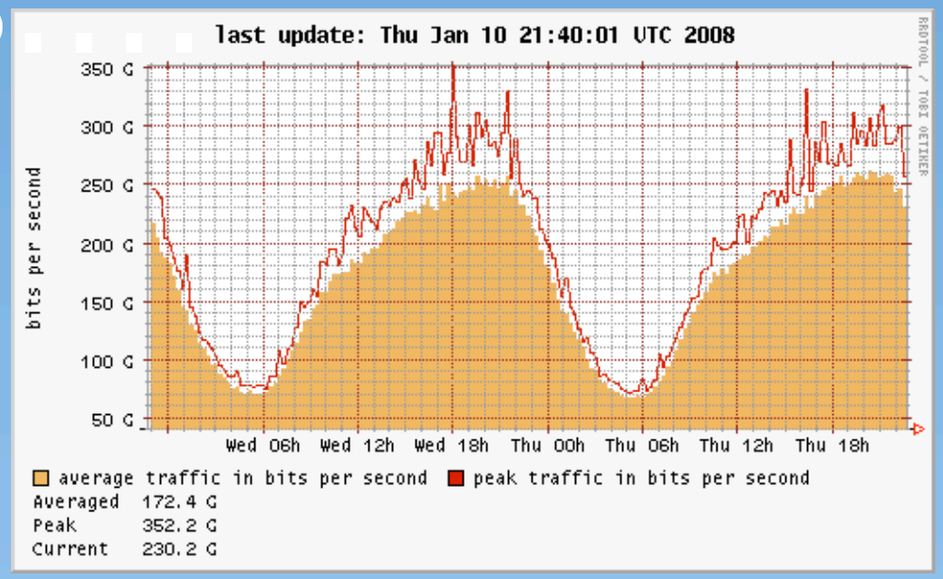


Major European Peering Hotspots

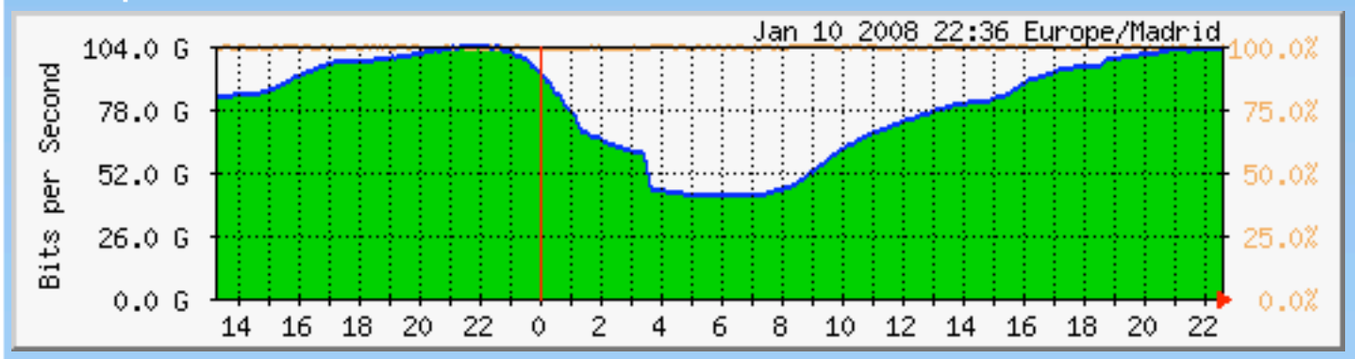
Ams-IX



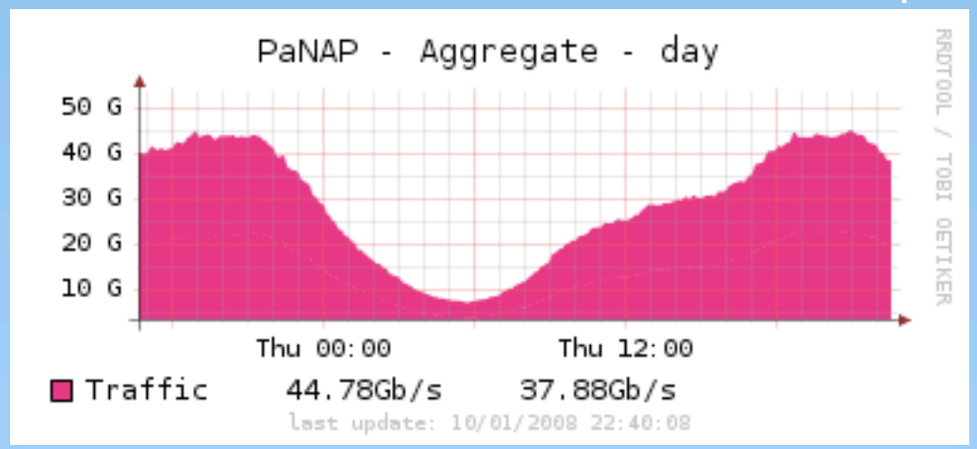
DE-CIX



Espanix

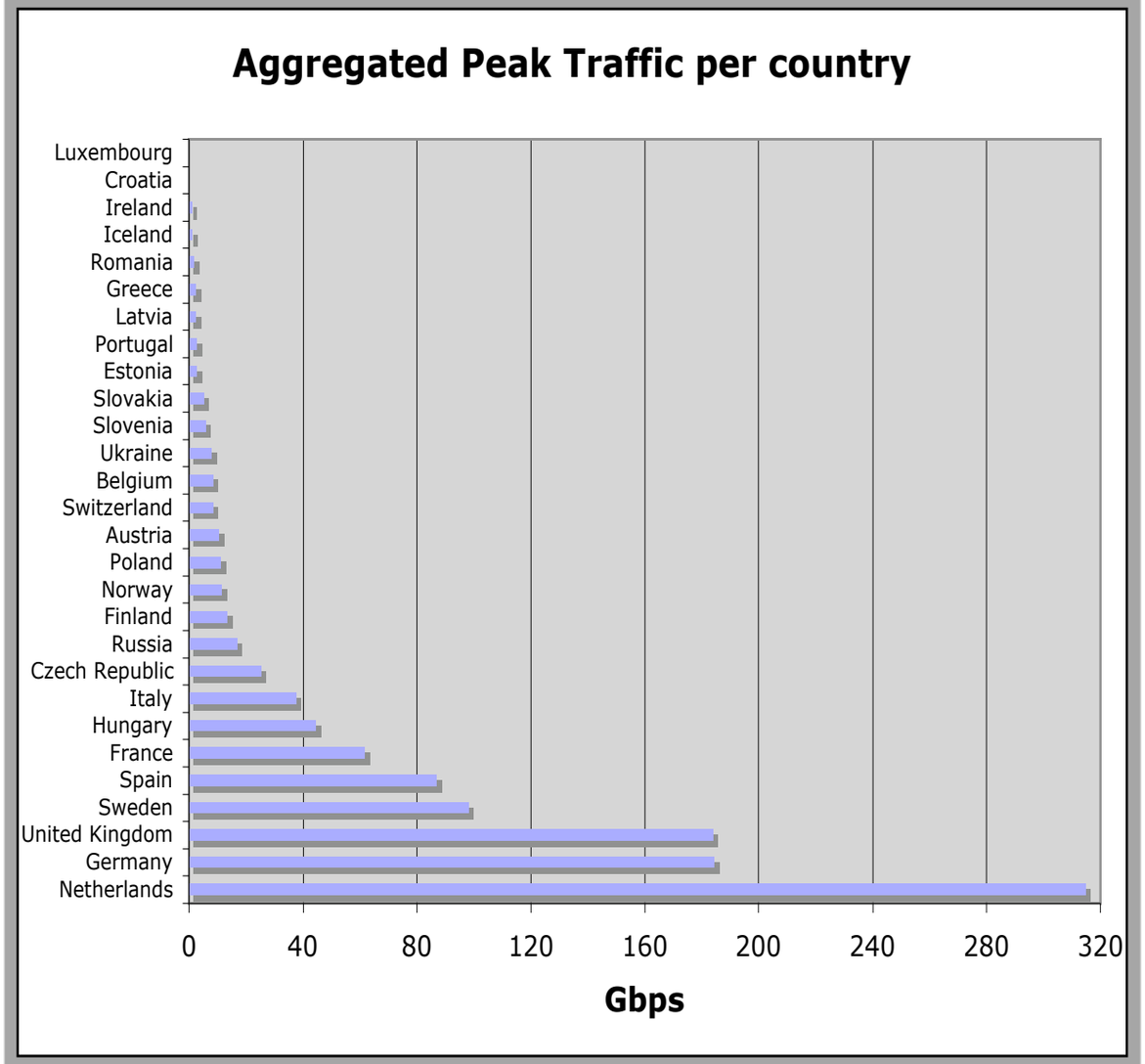


Panap



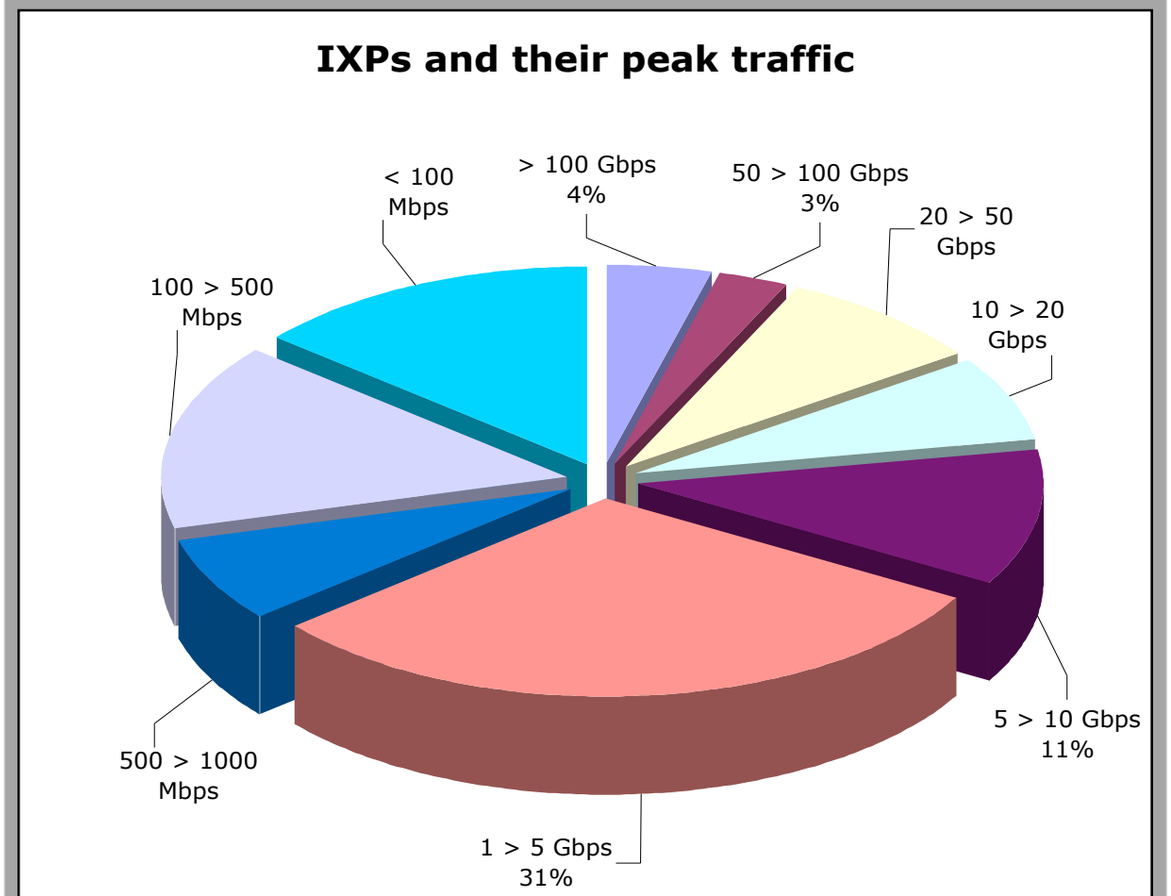
A better way to show hotspots?

UK, DE, and NL way out in front due to effects of the “big three”. Networks from all over the world bring traffic to these exchanges.



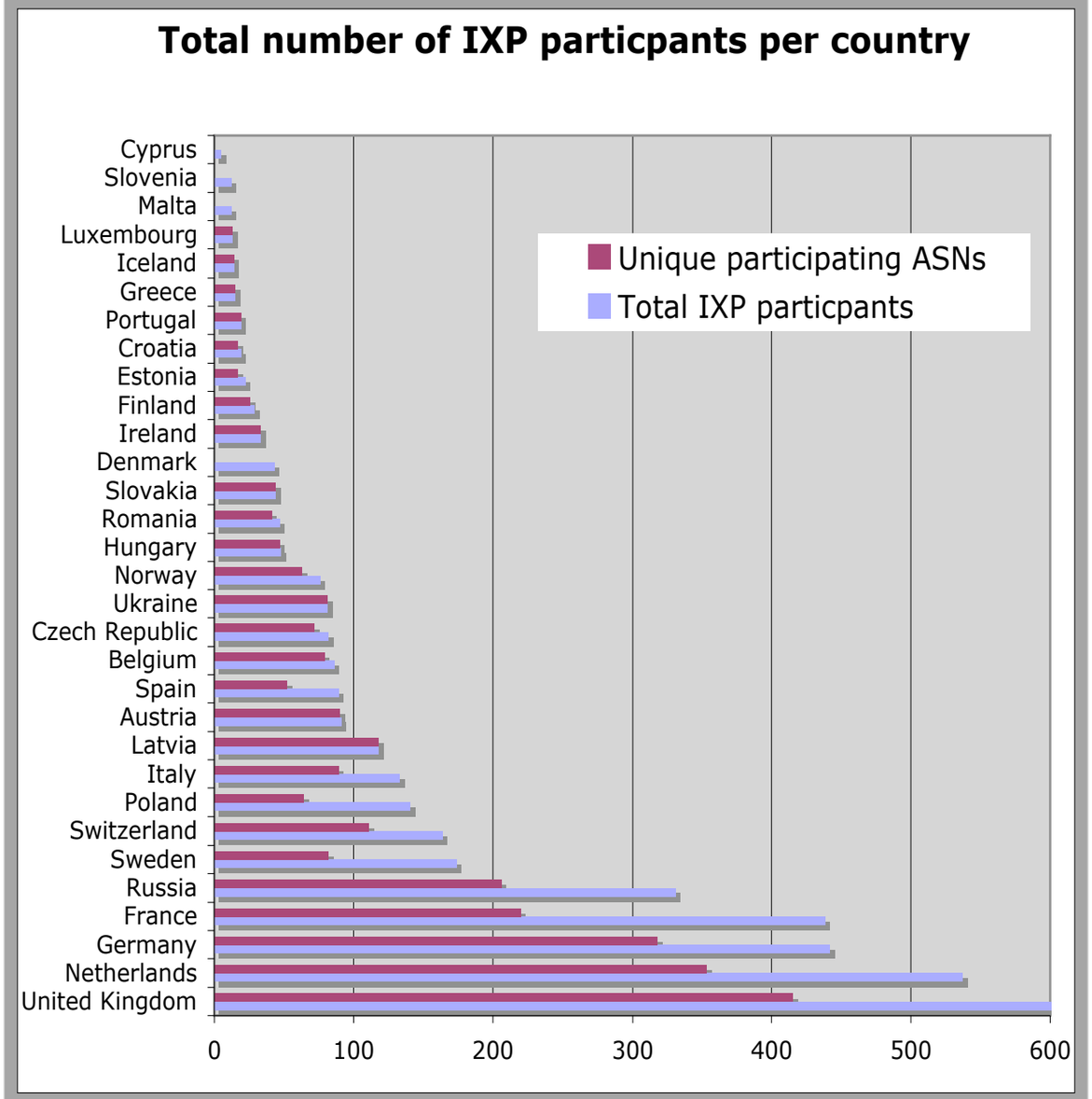
IXPs and Peak Traffic

Peak traffic	# of IXPs	% of total
> 100 Gbps	3	4%
50 > 100 Gbps	2	3%
20 > 50 Gbps	6	8%
10 > 20 Gbps	5	7%
5 > 10 Gbps	8	11%
1 > 5 Gbps	22	31%
500 > 1000 Mbps	5	7%
100 > 500 Mbps	11	15%
< 100 Mbps	10	14%
Total	72	100%



London is #1 for reach!

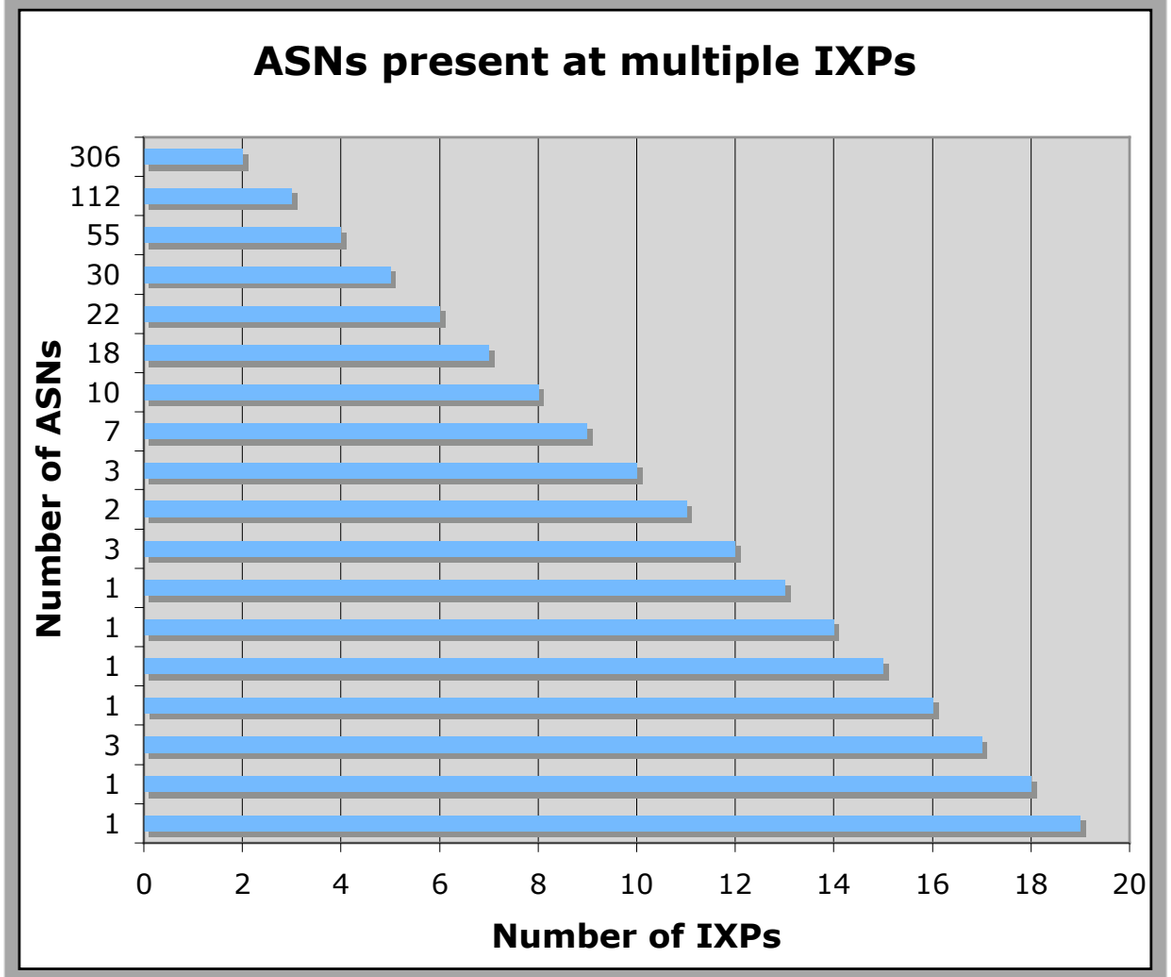
The UK houses 601 peering networks, and 415 who peer nowhere but in the UK.



ASNs present at >1 IXP

577 ASNs peer at more than one IXP, so you may find that your important target peers are at your local exchange.

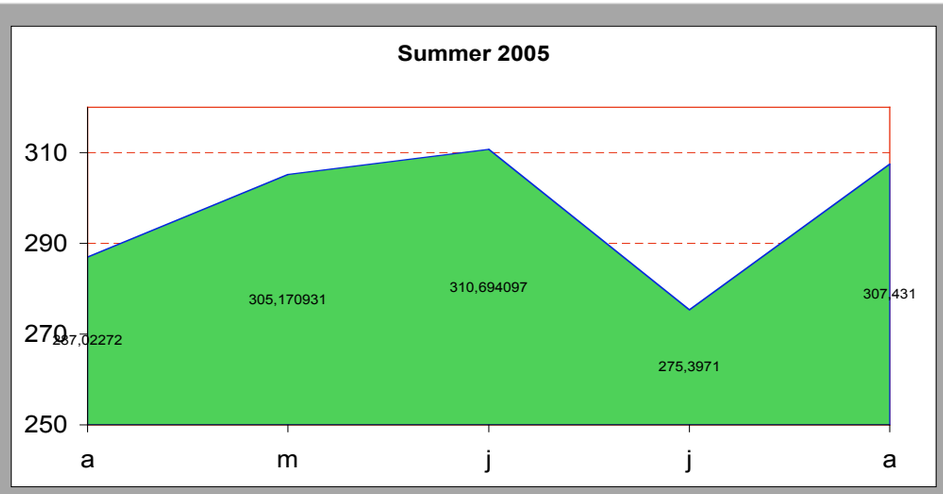
One ASN (8220) is present at 19 exchanges.

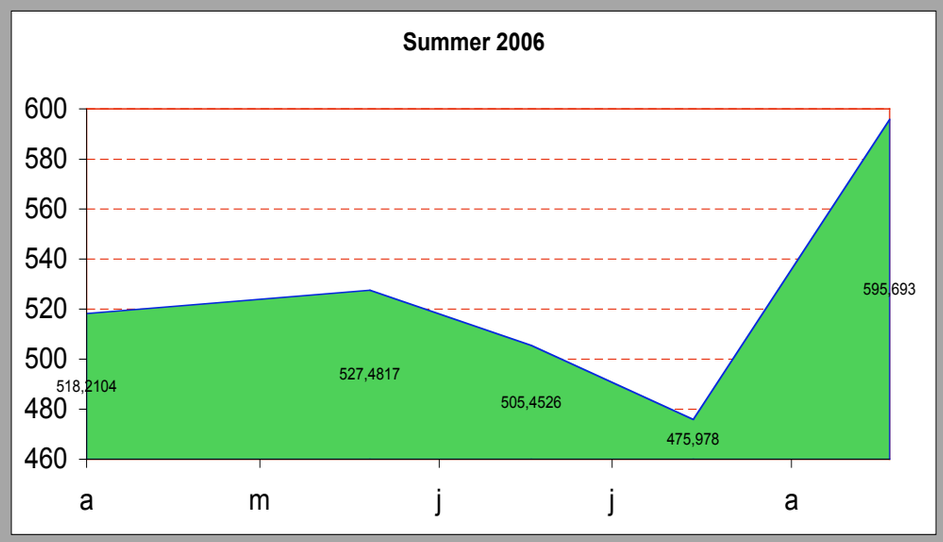


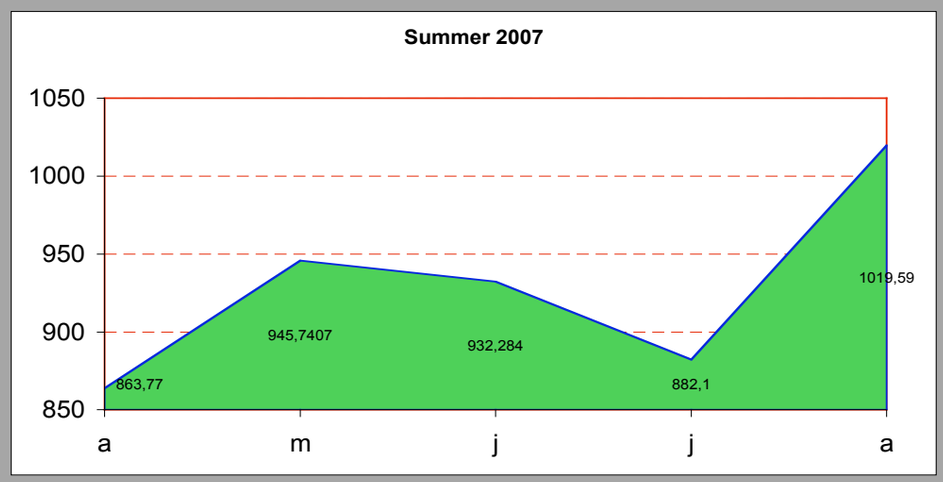
Using an IX as a Barometer

Usual to see traffic dip in Summer.

This year, traffic dipped twice - once in April when there was unusually warm weather across Europe, and once for the usual summer dip.



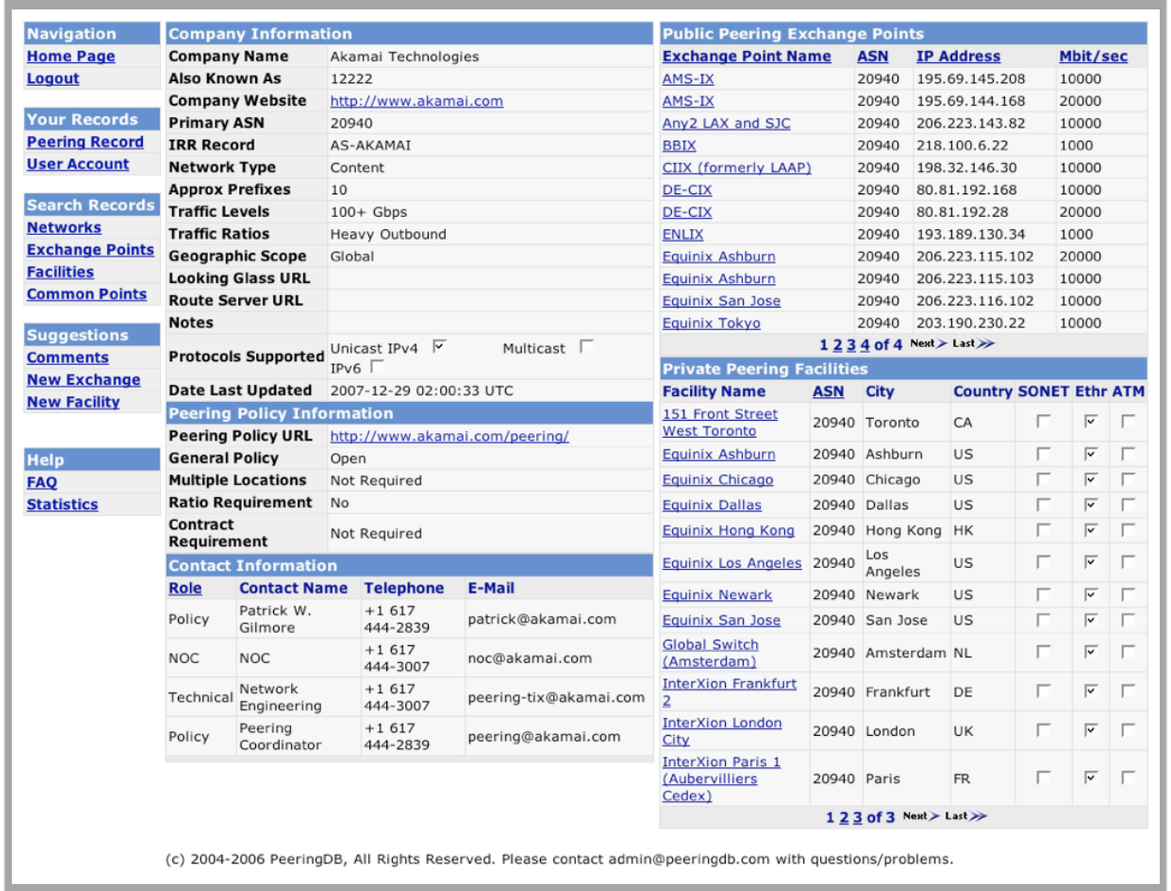




Identifying useful IXPs

You need to identify where your traffic goes (e.g. netflow), then find out where the remote network is connected, and if they will peer.

www.peeringdb.com helps with the legwork.



Navigation
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Company Information

Company Name	Akamai Technologies
Also Known As	12222
Company Website	http://www.akamai.com
Primary ASN	20940
IRR Record	AS-AKAMAI
Network Type	Content
Approx Prefixes	10
Traffic Levels	100+ Gbps
Traffic Ratios	Heavy Outbound
Geographic Scope	Global
Looking Glass URL	
Route Server URL	
Notes	
Protocols Supported	Unicast IPv4 ☑ Multicast ☐ IPv6 ☐
Date Last Updated	2007-12-29 02:00:33 UTC

Peering Policy Information

Peering Policy URL	http://www.akamai.com/peering/
General Policy	Open
Multiple Locations	Not Required
Ratio Requirement	No
Contract Requirement	Not Required

Contact Information

Role	Contact Name	Telephone	E-Mail
Policy	Patrick W. Gilmore	+1 617 444-2839	patrick@akamai.com
NOC	NOC	+1 617 444-3007	noc@akamai.com
Technical	Network Engineering	+1 617 444-3007	peering-tix@akamai.com
Policy	Peering Coordinator	+1 617 444-2839	peering@akamai.com

Public Peering Exchange Points

Exchange Point Name	ASN	IP Address	Mbit/sec
AMS-IX	20940	195.69.145.208	10000
AMS-IX	20940	195.69.144.168	20000
Any2 LAX and SJC	20940	206.223.143.82	10000
BBIX	20940	218.100.6.22	1000
CIIX (formerly LAAP)	20940	198.32.146.30	10000
DE-CIX	20940	80.81.192.168	10000
DE-CIX	20940	80.81.192.28	20000
ENLIX	20940	193.189.130.34	1000
Equinix Ashburn	20940	206.223.115.102	20000
Equinix Ashburn	20940	206.223.115.103	10000
Equinix San Jose	20940	206.223.116.102	10000
Equinix Tokyo	20940	203.190.230.22	10000

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Private Peering Facilities

Facility Name	ASN	City	Country	SONET	Ethr	ATM
151 Front Street West Toronto	20940	Toronto	CA	☐	☑	☐
Equinix Ashburn	20940	Ashburn	US	☐	☑	☐
Equinix Chicago	20940	Chicago	US	☐	☑	☐
Equinix Dallas	20940	Dallas	US	☐	☑	☐
Equinix Hong Kong	20940	Hong Kong	HK	☐	☑	☐
Equinix Los Angeles	20940	Los Angeles	US	☐	☑	☐
Equinix Newark	20940	Newark	US	☐	☑	☐
Equinix San Jose	20940	San Jose	US	☐	☑	☐
Global Switch (Amsterdam)	20940	Amsterdam	NL	☐	☑	☐
InterXion Frankfurt 2	20940	Frankfurt	DE	☐	☑	☐
InterXion London City	20940	London	UK	☐	☑	☐
InterXion Paris 1 (Aubervilliers Cedex)	20940	Paris	FR	☐	☑	☐

1 2 3 of 3 Next > Last >>

Euro-ix for ISPs

- www.euro-ix.net/isp/choosing/
- Like peeringdb, it allows you to evaluate the value of an exchange in terms of which networks you can reach.
- Also allows you to compare other services an IXP can provide you in addition to access
- .... of course there are (at least) two exchanges in the room who can answer specific questions about peering in London. :-)

Any Questions ?

- LINX - sales@linx.net Mike - mike@linx.net
- LONAP - sales@lonap.net Andy andy@lonap.net

- www.linx.net www.lonap.net www.euro-ix.net
- .... or ask now :-)