



# Euro-IX and IX-F Update

March 2015

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Twitter: @euroix

# ➤ What do we do?

- 2 Forums per year
- Maintaining IXP Database and tools
- Newsletter – Subscribe here: [www.euro-ix.net/newsletters](http://www.euro-ix.net/newsletters)
- Working Groups
- IXP Reports
- Twinning Program

**Why do we do it? For the good of the community!**

# Association of IXPs

77 affiliated IXPs:

- 53 IXPs in the Euro-IX Region  
=> in 32 Countries, operating over 100 IXPs
- 24 IXPs from the rest of the world
- Newest Members:  
Angonix (Angola), SOX (Serbia),  
ARMIX (Armenia), KOSIX (Kosovo), TPIX (Poland)

# > 11 Patrons

- ADVA Optical Networking
- Alcatel-Lucent
- Brocade
- BTI Systems
- Extreme Networks
- Huawei
- Interxion
- Juniper Networks
- MRV
- Telecity
- Telehouse



# Internet Exchange Federation

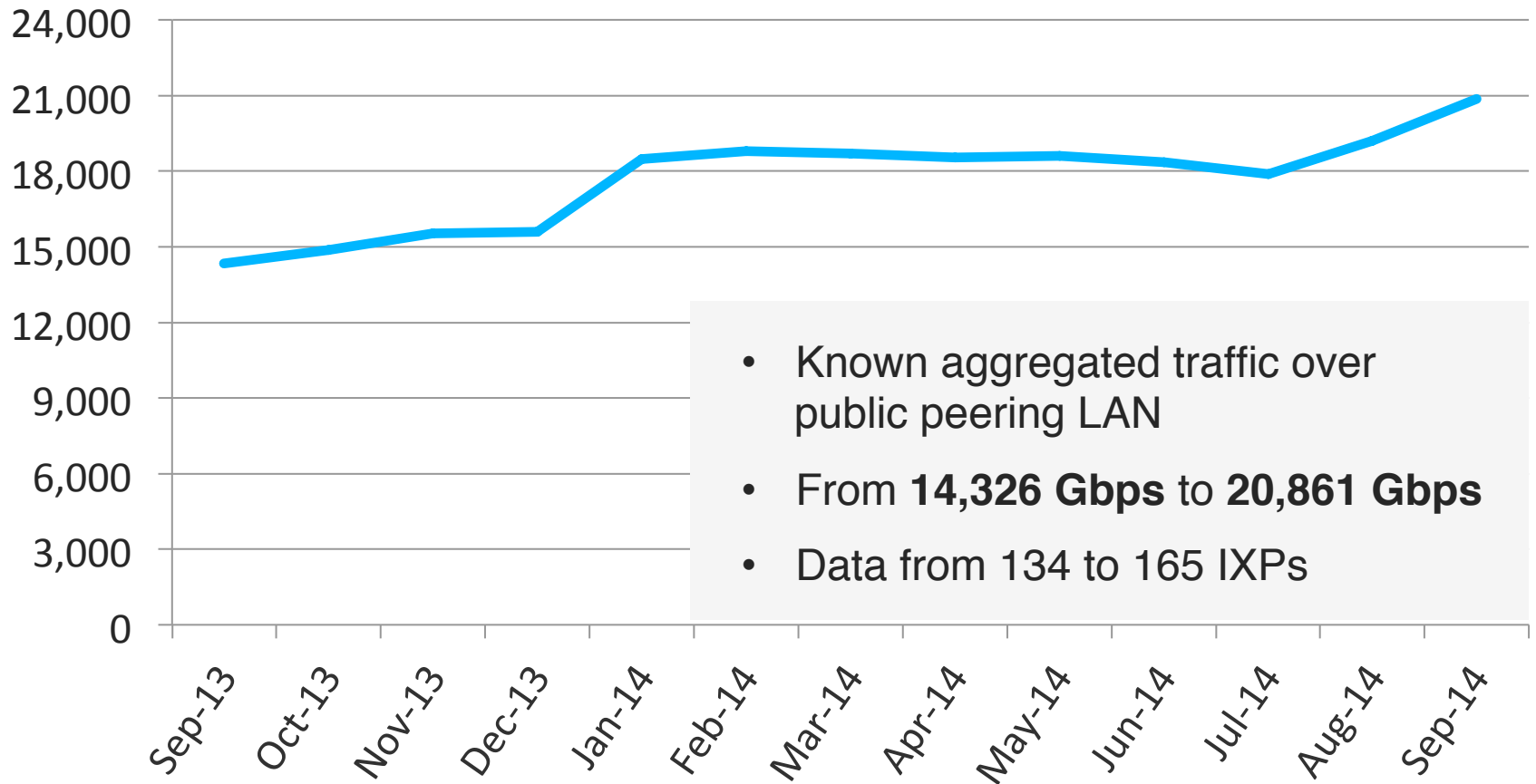
# ➤ Internet Exchange Federation (IX-F)

- MOU signed by APIX, Euro-IX and LAC-IX to form the IX-F in November 2012 – [www.ix-f.net](http://www.ix-f.net)
- Af-IX signed the MoU to join the IX-F in 2014
- Idea to have a Global IXP DB
- Global BCPs for IXPs - <https://www.euro-ix.net/euro-ix-bcp>
- Automate Data Collection from IXPs
- Plans to collaborate with other external Databases

# IX-F Board

- **Af-IX**  
Nishal Goburdhan – JINX (South Africa)  
Kyle Spencer – UIXP (Uganda)
- **APIX**  
Raphael Ho - Equinix (Hong Kong)  
Katsuyasu Toyama - JPNAP (Japan)
- **Euro-IX**  
Arnold Nipper - DE-CIX (Germany)  
John Souter - LINX (United Kingdom)
- **LAC-IX**  
Ariel Graizer - NAP CABase (Argentina)  
Milton Kashiwakura - PTT.br (Brazil)

# Global Traffic Growth – 12 months







# IXP Database

# IXP Database Project

- There are many IXP Databases...

Navigation: Home Page, Logout, Your Records, Peering Record, User Account

Search Public Exchange Points

Exchange Name:  City:

IP Block:  Country:

Media Type:  Continental Region:

Search

List of Public Exchange Points

Exchange Name	Long Name	City/Region	Country	Continental Region	Media Type	Participants
ASIX	Alpes Adria Internet Exchange	Klagenfurt	AT	Europe	Ethernet	4
ACTIX	ACT Internet Exchange	Canberra, ACT	AU	Australia	Ethernet	11
ADN-IX		Valence	FR	Europe	Ethernet	0
AlbertaIX	AlbertaIX	Calgary	CA	North America	Ethernet	4
AMPATH	AMPATH - Florida International University/CABA	Miami	US	North America	Multiple	0
AMS-IX	Amsterdam Internet Exchange	Amsterdam	NL	Europe	Ethernet	1229
AMS-IX Caribbean	Amsterdam Internet Exchange Caribbean	Curacao	CW	South America	Ethernet	11
AMS-IX Hong Kong	Amsterdam Internet Exchange Hong Kong	Hong Kong	HK	Asia Pacific	Ethernet	27
AMS-IX NY	AMS-IX New York	New York	US	North America	Ethernet	14
Angola-IXP / ANG-IXP	Angola Internet Exchange point	Luanda	AO	Africa	Ethernet	3
APX	Auckland Peering Exchange	Auckland	NZ	Asia Pacific	Ethernet	56
ArmIX	Armenian Internet Exchange	Yerevan	AM	Europe	Ethernet	0
ASIX6	Academia Sinica Internet Exchange 6	Taipei	TW	Asia Pacific	Multiple	1
ASSOCIO	mpls ASSOCIO	Tokyo, Nation wide	jp	Asia Pacific	Multiple	0
AZIX	Arizona Internet Exchange	Phoenix, Arizona	US	North America	Ethernet	10
B-IX	Balkan Internet Exchange	Sofia	BG	Europe	Ethernet	13

www.datacentermap.com/ixps.html

Map Database Search Request quote Research About Login / Signup

Internet Exchange Points  
# IXPs

On the map below you can see an overview of internet exchange points (IXPs) around the world. Zoom in and click on a city marker to see the internet exchange points available in the city.

Map Satellite

How to Safely Avoid Overcooling Your Data Center and Save Money Today

Download Now

Peering Research  
Related Reports & White Papers

- Multi-Tenant Datacenter: North American Providers - 2013
- To Build or Not To Build - Part 2: Should Service Providers Build Or Lease Their Datacenters?

Related News

- Alcatel first connected customer at DE-CIX New York
- DE-CIX New York signs on Alcatel as its first customer
- Microsoft Adds Private Azure Units at 37 European Data Centers
- Alcatel becomes First DE-CIX New York Customer
- TelecityGroup adds Microsoft Azure to Cloud-IX ecosystem

Latest Facilities

- Caronet XB, Charlotte

TRUSTED SERVER HOSTING SINCE 1994

Managed Hosting Hybrid Hosting

www.telegeography.com/research-services/internet-exchange-points-directory/

TeleGeography  
AUTHORITATIVE TELECOM DATA

RESEARCH SERVICES CUSTOM RESEARCH TELECOM MAPS TELECOM RESOURCES

HOME > RESEARCH SERVICES > Internet Exchange Points Directory

## Internet Exchange Points Directory

The data provided in our Internet Exchange Points Directory is now accessible via our free interactive [Internet Exchange Map](#). The map provides information for active Internet exchanges and buildings. Select an Internet exchange from the list provided to view the buildings in which that exchange is present. Or, select a building from the map projection to access data about the building, including its street address and a list of Internet exchanges present there.

The Internet Exchange Map is based on data compiled by TeleGeography, and is updated regularly to ensure that it is as accurate and as up-to-date as possible. [Click here](#) for more information about the map, or try it out at [www.interneteixchangenmap.com](#).

Related Services

Interactive Internet Exch  
An interactive, regularly exchanges worldwide.

Colocation Database  
Comprehensive online

https://prefix.pch.net/applications/ixpdir/

PCH  
Packet Clearing House

Log In search pch.net

Home About Purpose Technology Resources Calendar Sponsors Contact

EDUCATION RESEARCH POLICY

Help

- Show inactive IXPs
- Hide inactive IXPs
- Show summary views
- Submit a change
- Featurebug report

World map showing Internet Exchange Points (IXPs) with PCH logo.

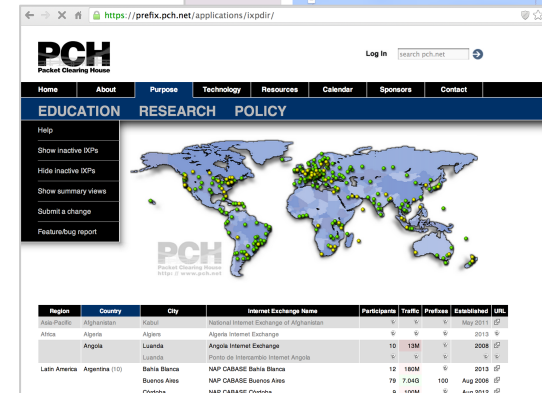
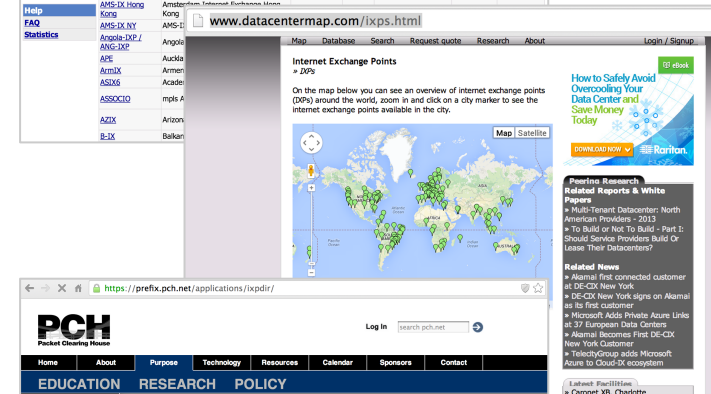
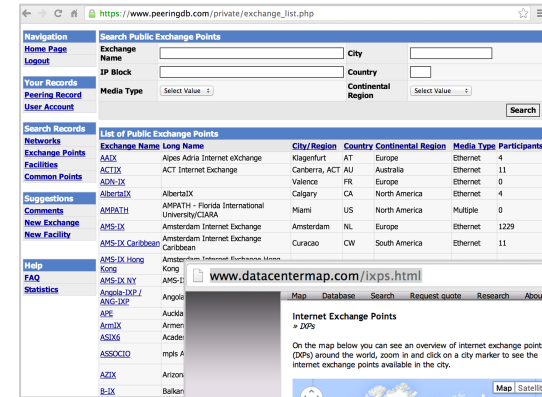
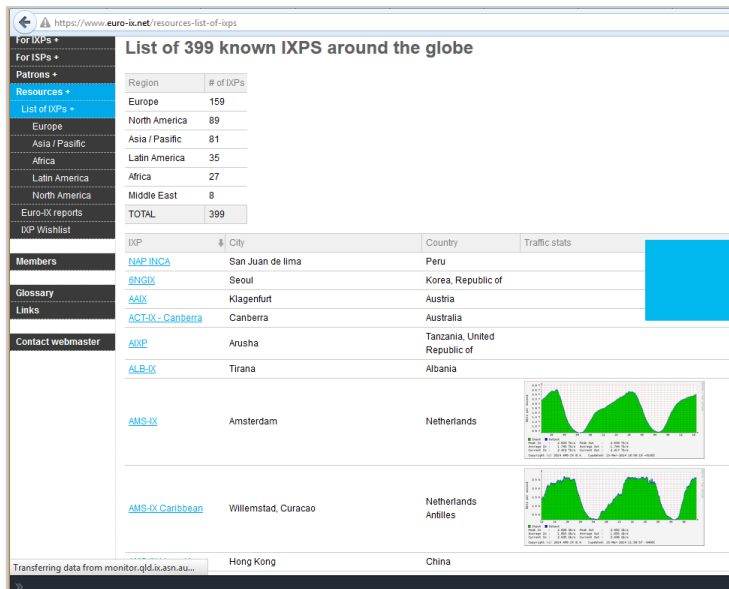
Region	Country	City	Internet Exchange Name	Participants	Traffic	Prefixes	Established	URL
Africa	Algeria	Kasli	National Internet Exchange of Algeria				May 2011	
Africa	Algeria	Algeria	Algeria Internet Exchange	9			2013	
Africa	Angola	Luanda	Angola Internet Exchange	10	13M		2008	
Africa	Angola	Luanda	Foro da Internet Angola	5				
Latin America	Argentina (10)	Buenos Aires	NAP CABA	12	100M		2013	
Latin America	Argentina (10)	Buenos Aires	NAP CABA	79	7.045	100	Aug 2006	
Latin America	Argentina (10)	Cordoba	NAP CABA Cordoba	9	100M		Aug 2012	

# IXP Database

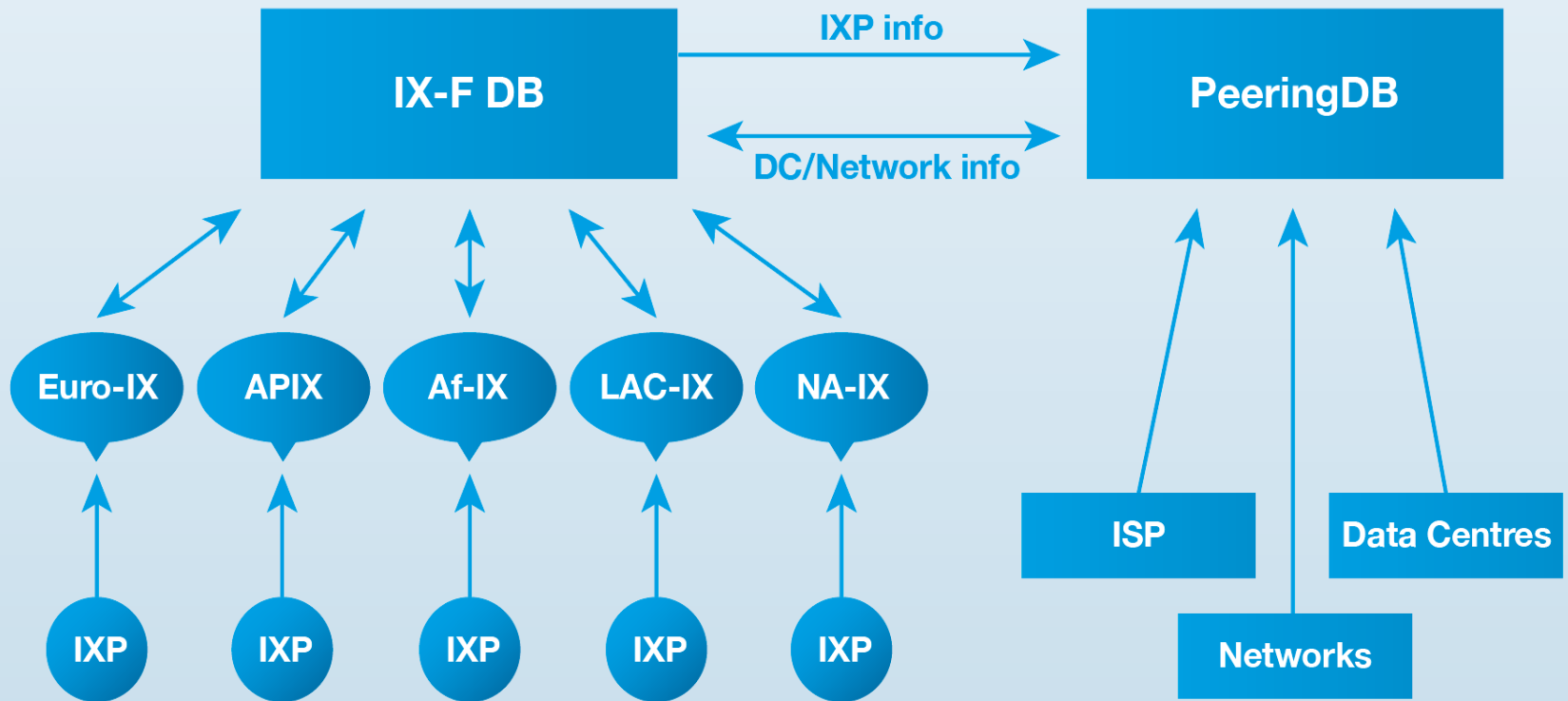
- A single canonical place for IXP data
- Development of IXP Database has started
- IXP data maintained by IXPs this ensures greater accuracy
- Useful for the IXP members to see IX data in context
- We want it to be open and pluggable

# The plan

- Others will be able to mirror IXP Data



# ➤ Work in progress..



# IXP Database

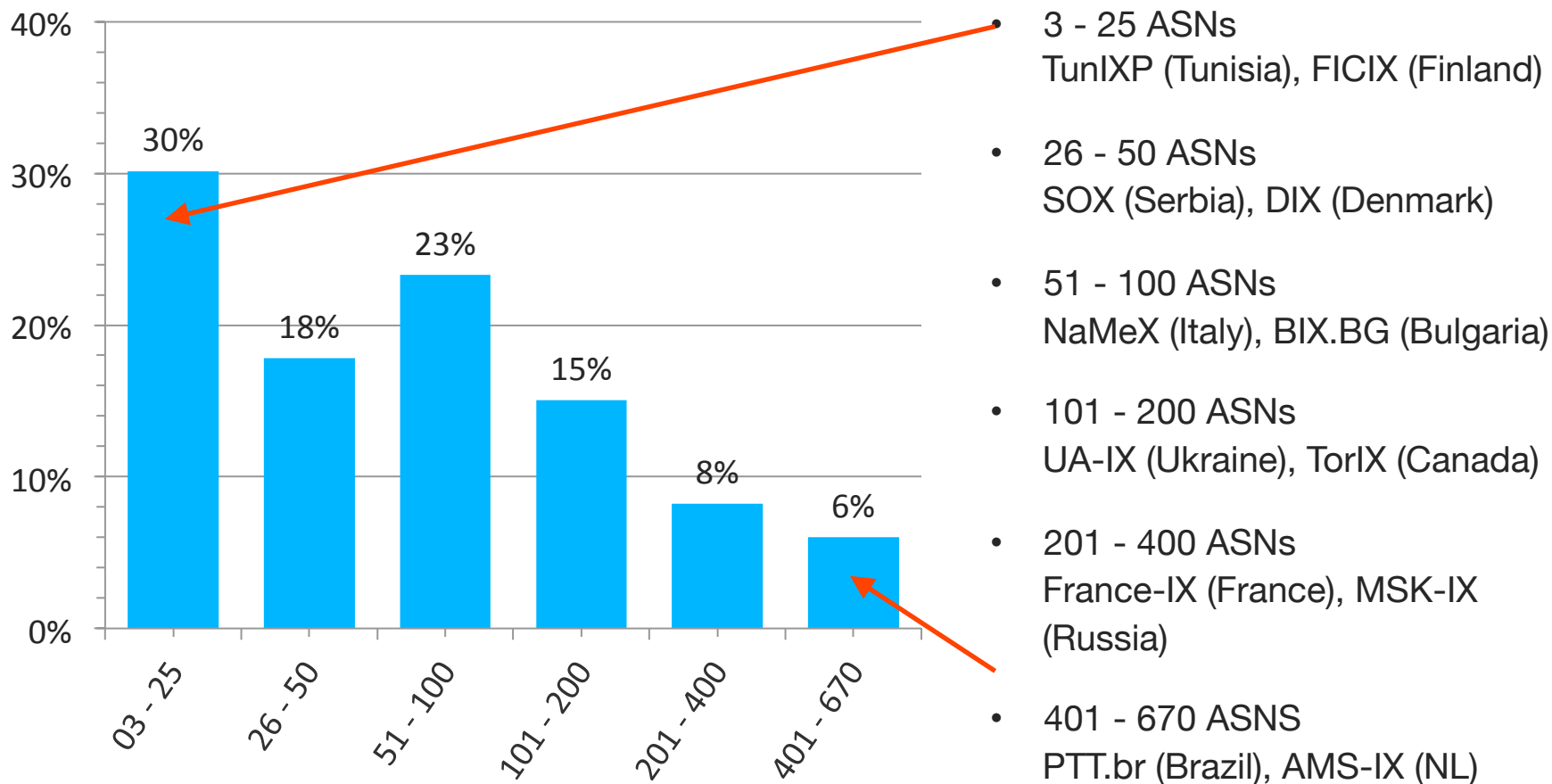
IXP DB API server written using Python / Django, which can:

- Get / create / update / delete IXP and Organisation objects
- All interaction is JSON
- IXPAAs will be able to create, update and delete IXPs from the databases.
- All code is available on the Euro-IX GitHub repository <https://github.com/Euro-IX>



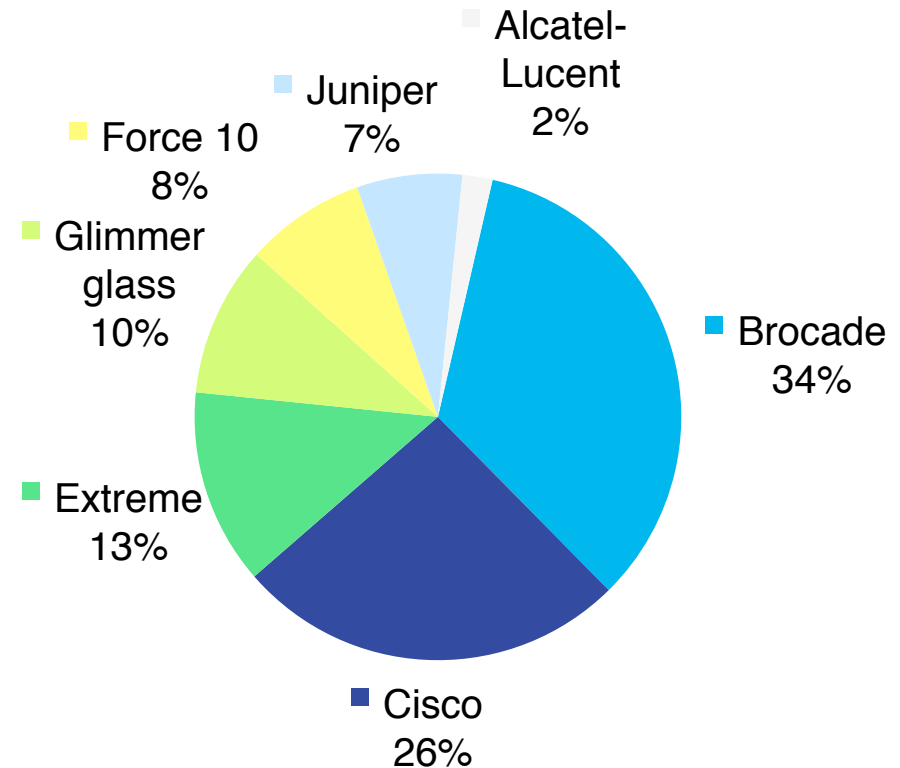
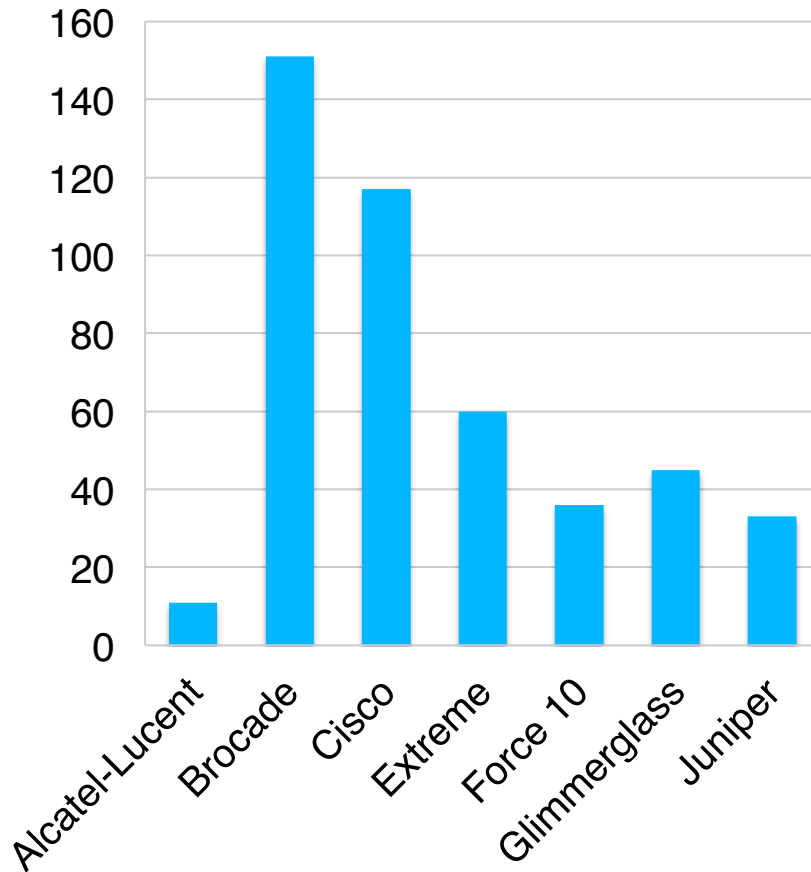
# Euro-IX Database

# > Range of ASNs connected to Members

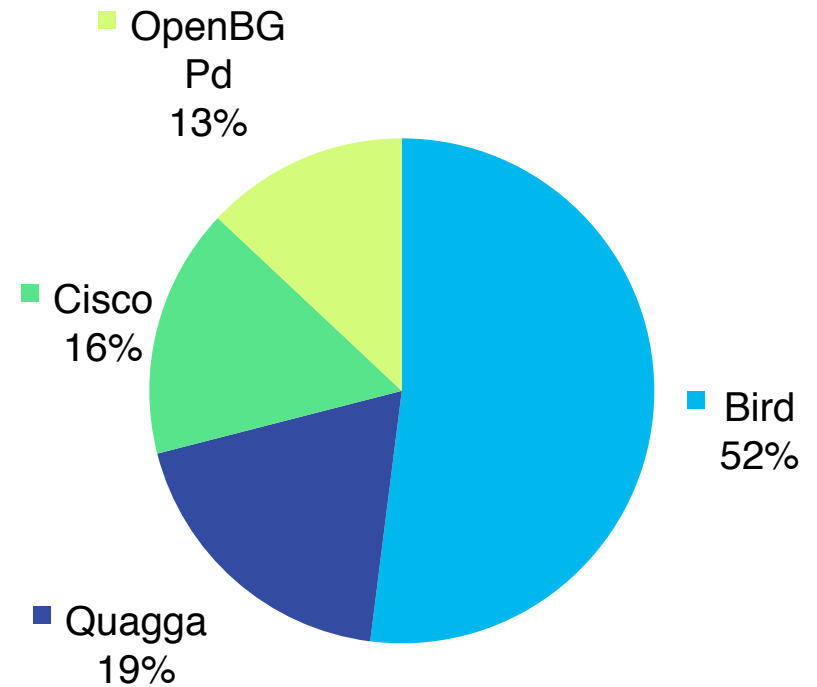
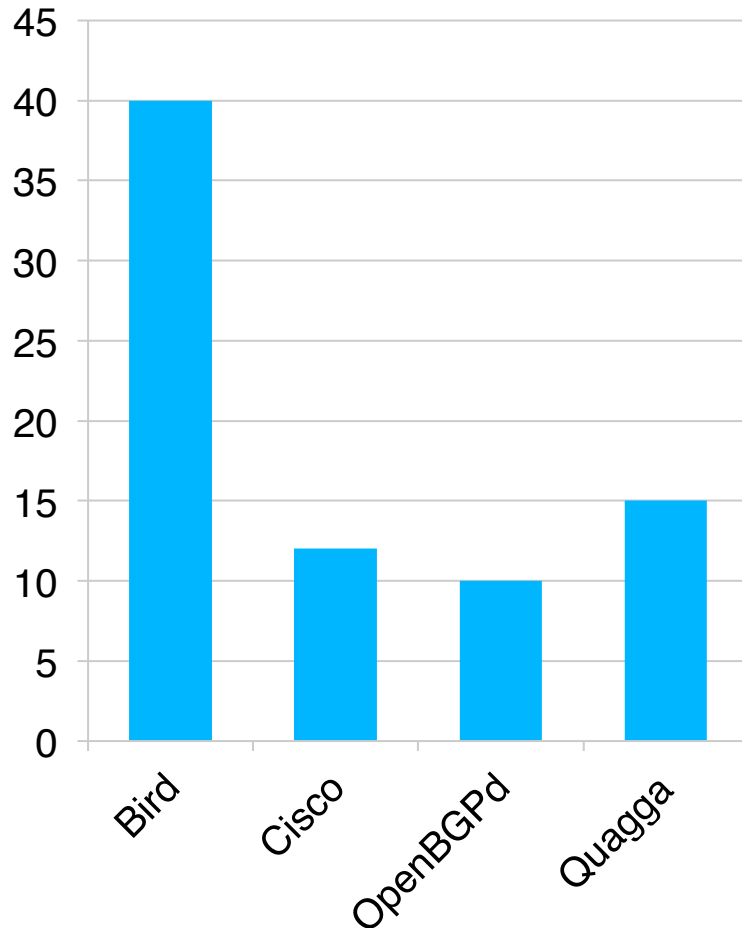




# Switch/Router DB – Vendors used



# Route Server DB – Deamons used





# Euro-IX Tools

# Euro-IX Tools

- IXP Service Matrix - [euro-ix.net/tools/ixp\\_matrix](https://euro-ix.net/tools/ixp_matrix)
- Peering Matrix - [euro-ix.net/tools/peering\\_matrix](https://euro-ix.net/tools/peering_matrix)
- ASN Search [euro-ix.net/tools/asn\\_search](https://euro-ix.net/tools/asn_search)
- ASN Filter - [euro-ix.net/tools/asn\\_filter](https://euro-ix.net/tools/asn_filter)
- Newest ASN entries - [euro-ix.net/tools/asn\\_newest](https://euro-ix.net/tools/asn_newest)
- Most common ASNs - [euro-ix.net/tools/asn\\_common](https://euro-ix.net/tools/asn_common)

# ASN Search Tool

Enter an ASN, IXP or organisation name:

Query

Search

*Note: The ASN information contained within this database is a combination of both affiliated and non-affiliated IXP content. While the affiliated IXP content is highly accurate, the non-affiliated IXP content is updated on a best effort basis and is nonetheless considered to be quite accurate.*

AF-IX		
IXP Participants	IPv6 active	Unique ASNs
275	43	223
North America		
IXP Participants	IPv6 active	Unique ASNs
2161	390	1005
LAC-IX		
IXP Participants	IPv6 active	Unique ASNs
1105	490	763
APIX		
IXP Participants	IPv6 active	Unique ASNs
1469	350	872
Euro-IX		
IXP Participants	IPv6 active	Unique ASNs
7881	4183	4188
Global		
IXP Participants	IPv6 active	Unique ASNs
12891	5456	7394

# ASN Filter

## ASNs that peer at:

NAP INCA (Peru)  
6NGIX (Korea, Republic of)  
AAIX (Austria)  
ACT-IX – Canberra (Australia)  
ADN-IX (France)  
AIXP (Tanzania, United Republic of)  
ALB-IX (Albania)  
AlbertalX (Canada)  
AMPATH (United States of America )  
AMS-IX (Netherlands)  
AMS-IX Caribbean (Netherlands Antilles)  
AMS-IX East Africa (Kenya)  
AMS-IX Hong Kong (China)  
AMS-IX New York (United States of America )  
ANG-IXP (Angola)

- ☐ List all  
☐ Only  
☐ And other IXPs  
☐ And at ⇒  
☐ But not at ⇒  
☐ And other IXPs, but not at ⇒

NAP INCA (Peru)  
6NGIX (Korea, Republic of)  
AAIX (Austria)  
ACT-IX – Canberra (Australia)  
ADN-IX (France)  
AIXP (Tanzania, United Republic of)  
ALB-IX (Albania)  
AlbertalX (Canada)  
AMPATH (United States of America )  
AMS-IX (Netherlands)  
AMS-IX Caribbean (Netherlands Antilles)  
AMS-IX East Africa (Kenya)  
AMS-IX Hong Kong (China)  
AMS-IX New York (United States of America )  
ANG-IXP (Angola)

Filter

# Peering Matrix

IXP	Total listed ASNs at IXP	ASNs that don't peer at other IXPs	% of ASNs that don't peer at other IXPs	ASNs that peer at other IXPs	% of ASNs that peer at other IXP	ADN-IX	ALB-IX	AMS-IX	AMS-IX Caribbean	AMS-IX East Africa	AMS-IX Hong Kong	AMS-IX New York	ANGONIX	ARMIX	BBIX - Fukuoka	BBIX - Nagoya	BBIX - Okinawa	BBIX - Osaka	BBIX - Tokyo	BBIX - Tokyo	BCIX	BIX	BIX	BIX.BG	BNIX	CATNIX	CIX	CIXP	CoreSite - Any Los	CyrusOne	DE-CIX Frankfurt	DE-CIX Hamburg	DE-CIX Munich	DE-CIX New York	DIX - Balearup	DIX - Skanderborg
<a href="#">AMS-IX</a>	<a href="#">679</a>	<a href="#">114</a>	17	<a href="#">565</a>	83	0	0	<a href="#">679</a>	<a href="#">1</a>	0	0	0	0	0	0	0	0	0	<a href="#">2</a>	0	<a href="#">26</a>	<a href="#">15</a>	0	<a href="#">13</a>	<a href="#">20</a>	<a href="#">7</a>	0	<a href="#">19</a>	<a href="#">31</a>	0	<a href="#">305</a>	<a href="#">12</a>	<a href="#">7</a>	<a href="#">1</a>	0	0
<a href="#">AMS-IX Caribbean</a>	<a href="#">7</a>	<a href="#">2</a>	29	<a href="#">5</a>	71	0	0	<a href="#">1</a>	<a href="#">7</a>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<a href="#">1</a>	<a href="#">1</a>	0	0	0	0	0	0	0	0	0	0
<a href="#">ARMIX</a>	<a href="#">8</a>	<a href="#">6</a>	75	<a href="#">2</a>	25	0	0	0	0	0	0	0	0	<a href="#">8</a>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<a href="#">1</a>	0	0	0	0	0
<a href="#">BBIX - Tokyo</a>	<a href="#">8</a>	<a href="#">1</a>	13	<a href="#">7</a>	87	0	0	<a href="#">2</a>	0	0	0	0	0	0	0	0	0	0	<a href="#">8</a>	0	<a href="#">2</a>	<a href="#">1</a>	0	<a href="#">2</a>	0	0	0	0	<a href="#">3</a>	0	<a href="#">2</a>	<a href="#">1</a>	<a href="#">2</a>	<a href="#">1</a>	0	0
<a href="#">BCIX</a>	<a href="#">62</a>	<a href="#">22</a>	35	<a href="#">40</a>	65	0	0	<a href="#">26</a>	0	0	0	0	0	0	0	0	0	0	<a href="#">2</a>	0	<a href="#">62</a>	<a href="#">3</a>	0	<a href="#">5</a>	<a href="#">3</a>	<a href="#">1</a>	0	<a href="#">1</a>	<a href="#">8</a>	0	<a href="#">31</a>	<a href="#">8</a>	<a href="#">7</a>	<a href="#">1</a>	0	0
<a href="#">BIX</a>	<a href="#">51</a>	<a href="#">33</a>	65	<a href="#">18</a>	35	0	0	<a href="#">15</a>	0	0	0	0	0	0	0	0	0	0	<a href="#">1</a>	0	<a href="#">3</a>	<a href="#">51</a>	0	<a href="#">2</a>	<a href="#">4</a>	0	0	<a href="#">3</a>	<a href="#">4</a>	0	<a href="#">16</a>	<a href="#">1</a>	<a href="#">2</a>	<a href="#">1</a>	0	0
<a href="#">BIX.BG</a>	<a href="#">54</a>	<a href="#">25</a>	46	<a href="#">29</a>	54	0	0	<a href="#">13</a>	0	0	0	0	0	0	0	0	0	0	<a href="#">2</a>	0	<a href="#">5</a>	<a href="#">2</a>	0	<a href="#">54</a>	0	0	0	0	<a href="#">5</a>	0	<a href="#">16</a>	<a href="#">2</a>	<a href="#">3</a>	<a href="#">1</a>	0	0
<a href="#">BNIX</a>	<a href="#">45</a>	<a href="#">17</a>	38	<a href="#">28</a>	62	0	0	<a href="#">20</a>	0	0	0	0	0	0	0	0	0	0	0	0	<a href="#">3</a>	<a href="#">4</a>	0	0	<a href="#">45</a>	<a href="#">2</a>	0	<a href="#">3</a>	<a href="#">3</a>	0	<a href="#">17</a>	0	0	0	0	0
<a href="#">CATNIX</a>	<a href="#">29</a>	<a href="#">15</a>	52	<a href="#">14</a>	48	0	0	<a href="#">7</a>	<a href="#">1</a>	0	0	0	0	0	0	0	0	0	0	0	<a href="#">1</a>	0	0	0	<a href="#">2</a>	<a href="#">29</a>	<a href="#">1</a>	0	<a href="#">1</a>	0	<a href="#">4</a>	0	0	0	0	0
<a href="#">CIX</a>	<a href="#">29</a>	<a href="#">20</a>	69	<a href="#">9</a>	31	0	0	0	<a href="#">1</a>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<a href="#">1</a>	<a href="#">29</a>	0	0	0	<a href="#">3</a>	0	0	0	0	0
<a href="#">CIXP</a>	<a href="#">37</a>	<a href="#">8</a>	22	<a href="#">29</a>	78	0	0	<a href="#">19</a>	0	0	0	0	0	0	0	0	0	0	0	0	<a href="#">1</a>	<a href="#">3</a>	0	0	<a href="#">3</a>	0	0	<a href="#">37</a>	<a href="#">1</a>	0	<a href="#">13</a>	<a href="#">1</a>	0	0	0	0
<a href="#">CoreSite - Any2 Los Angeles</a>	<a href="#">147</a>	<a href="#">59</a>	40	<a href="#">88</a>	60	0	0	<a href="#">31</a>	0	0	0	0	0	0	0	0	0	0	<a href="#">3</a>	0	<a href="#">8</a>	<a href="#">4</a>	0	<a href="#">5</a>	<a href="#">3</a>	<a href="#">1</a>	0	<a href="#">1</a>	<a href="#">147</a>	0	<a href="#">28</a>	<a href="#">2</a>	<a href="#">3</a>	<a href="#">1</a>	0	0
<a href="#">DE-CIX Frankfurt</a>	<a href="#">585</a>	<a href="#">111</a>	19	<a href="#">474</a>	81	0	0	<a href="#">305</a>	0	0	0	0	0	<a href="#">1</a>	0	0	0	0	<a href="#">2</a>	0	<a href="#">31</a>	<a href="#">16</a>	0	<a href="#">16</a>	<a href="#">17</a>	<a href="#">4</a>	<a href="#">3</a>	<a href="#">13</a>	<a href="#">28</a>	0	<a href="#">585</a>	<a href="#">19</a>	<a href="#">16</a>	<a href="#">1</a>	0	0

# IXP Service Matrix

IXP	Location	Asn	Rs Asn	# Of Customers	# I Pv6 Ready	% I Pv6 Ready	# Of Sites	Last Month Traffic (Gb/S)	Public Stats	Non Profit	Priv. Peering	Ipv6 Lan Type	Ipv6 Registry	Multicast	Vlan Services	Out Of Band Access	24x7 Service	24x7 Access
<a href="#">ADN-IX</a>	Valence		N/A	0	0	0		0	-	-	-				-	-	-	-
<a href="#">ALB-IX</a>	Tirana		N/A	0	0	0		0	-	-	-				-	-	Y	-
<a href="#">AMS-IX Traffic</a>	Amsterdam	1200	6777	679	539	79.4	12	2927	Y	Y	Y	ISP Peering LAN	RIPE	No	Y	-	Y	Y
<a href="#">AMS-IX Caribbean Traffic</a>	Willemstad, Curacao	28017	N/A	7	0	0.0	1	0	Y	Y	Y				Y	-	Y	Y
<a href="#">AMS-IX East Africa Traffic</a>	Mombasa	327740	N/A	0	0	0	1	0	Y	Y	Y				Y	-	Y	Y
<a href="#">AMS-IX Hong Kong Traffic</a>	Hong Kong	58516	N/A	0	0	0	1	0	Y	Y	Y				Y	-	Y	Y
<a href="#">AMS-IX New York Traffic</a>	New York	62981	N/A	0	0	0	4	0	Y	Y	Y				Y	-	Y	Y
<a href="#">ANGONIX</a>	Luanda		N/A	0	0	0		0	-	-	-				-	-	-	-
<a href="#">ARMIX</a>	Yerevan	51225	N/A	8	8	100.0	1	0	-	Y	-				-	-	Y	Y
<a href="#">BBIX - Fukuoka</a>	Fukuoka		N/A	0	0	0		0	-	-	-				-	-	-	-

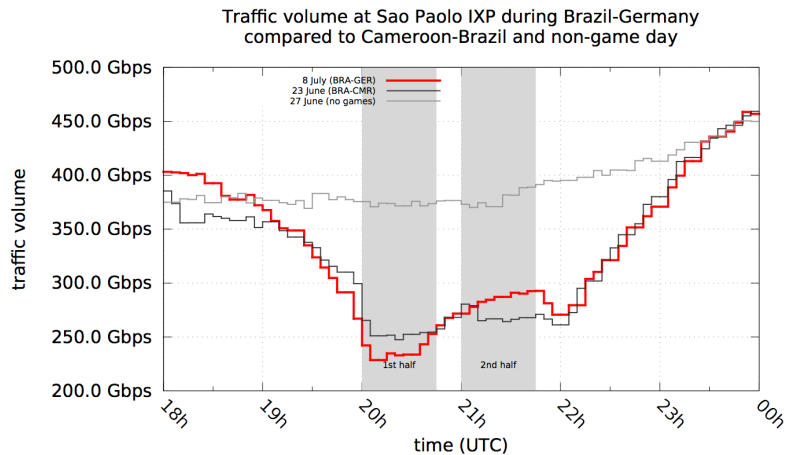




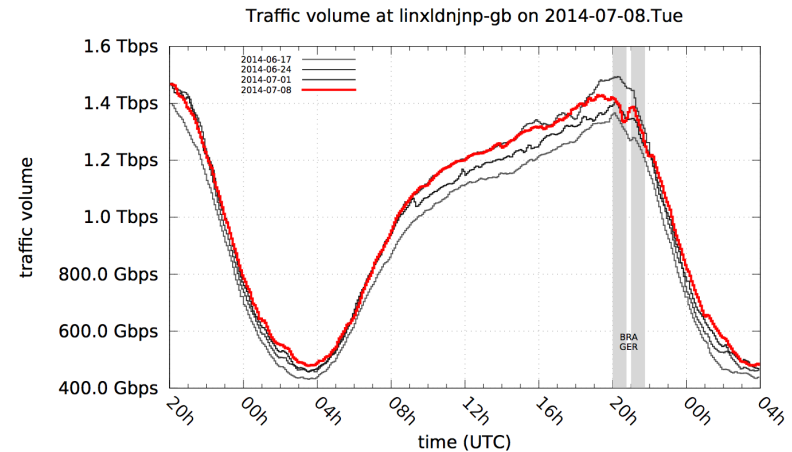
# Euro-IX projects

# ➤ Traffic during FIFA World Cup

- Collaboration with RIPE NCC  
Full Report - <https://labs.ripe.net/Members/emileaben/internet-traffic-during-the-world-cup-2014>



Traffic at PTT Sao Paulo  
(Brazil vs. Germany)



Traffic at LINX London - Juniper LAN  
(Brazil vs. Germany)

# ➤ Euro- IX Project

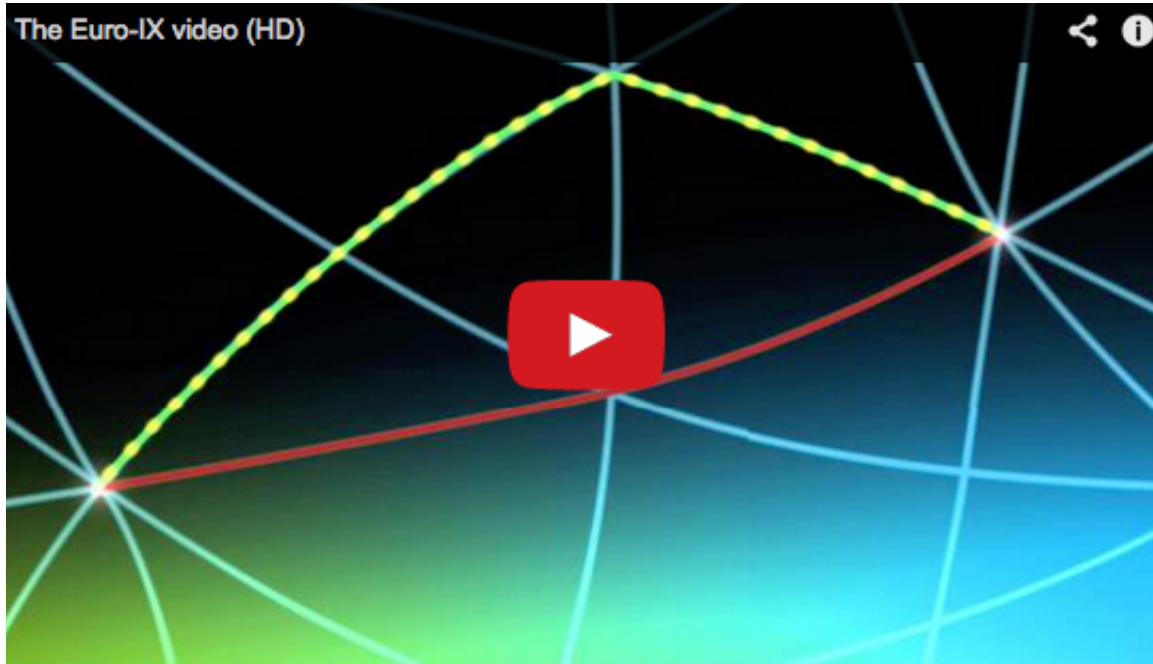
- IXP BCOPs updated -  
<https://www.euro-ix.net/euro-ix-bcp>
- IXP Bogon list - Team Cymru  
<http://www.team-cymru.org/ixp>
- IXP Workshops with ISOC
  - NIX.cz, France-IX, INEX and others



# ➤ Euro- IX Project

- Work done by the Euro-IX Data Task Force is being implemented, thanks to Elisa and Nick - <https://www.euro-ix.net/euro-ix-bcp> IXP Member list JSON Scheme
  - 8 IXPs already implemented!

# ➤ Internet Revealed, a film about IXPs



<https://www.youtube.com/channel/UCFyucVRAAMzxyJlsxnGwsjw>

Available in French, German, Portuguese, Spanish, Romanian, Arabic, Russian, Czech and Italian!

Interested in translating the video in your Language? Contact us!



# Thank you!

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