



euro-IX

IX-F database and tool

APRICOT 2017

Ho Chi Minh City, Vietnam

➤ What do we do?

- Two fora per year
- Maintain and develop the website, database and tools
- Annual European IXP Report
- Mentor-IX programme
- Fellowship programme
- Benchmarking Club (BMC)

➤ Talk to us and each other

- Mailing lists
- Newsletter – Subscribe here:
 - euro-ix.net/news-and-events/newsletter/
- Working Groups
- Social Media
 - Twitter @euroix
 - Facebook fb.me/maineuroix
 - YouTube youtube.com/channel/UCFyucVRAAMzxyJIsxnGwsjw

➤ Association of IXPs

82 affiliated IXPs:

- 56 IXPs in the Euro-IX Region 49 Countries, operating over 100 Peering LANs
- 26 IXPs from the rest of the world
- Newest Members:
Global-IX
DataIX


Patrons

- Arista
- Brocade
- Ciena
- Coriant
- ECI Telecom
- Equinix | Telecity
- Extreme Networks
- Huawei
- Interxion
- Juniper Networks
- MRV
- Nokia
- Telehouse

➤ Website – Top Improvements!


1. ASN Automation
2. Switch Database
3. Route Server Database
4. Edit your own profile
5. Edit your organisation and team members
6. Peering matrix, service matrix and ASN database all working
7. Database quality improvements

> Website

[Home](#) | [About](#) | [IXPs](#) | [News & Events](#) | [Join Euro-IX](#) | [For networks](#) | [Tools](#)

European Internet Exchange Association

Sign In



The 29th Euro-IX forum goes to Krakow! 6 - 8 November 2016.

Welcome to Euro-IX

We are an association of Internet Exchange Points (IXPs), promoting an open interchange of ideas and experiences, gained to mutual advantage of the membership, by offering fora, workshops, tutorials, mailing lists and online resources.

[Register for an account](#)

[Learn more about what we do »](#)

Latest News

What is an IXP?

OCTOBER NEWSLETTER OCT. 10, 2016

With only a few weeks left until the 29th forum, we encourage all those who want to attend to register ASAP. There will be a tour of the districts on Sunday 6th at 12.30, and a RIPE ATLAS workshop in the evening. [Find out more](#) about the forum and register [here](#)

We welcome new patron ARISTA to the Euro-IX community! Read their introduction and find out about the improved IX-F DB in the latest [newsletter](#)

TESPOK LAUNCHES AFRICA'S FIRST GLOBAL ROAMING EXCHANGE SEPT. 12, 2016

The Internet eXchange Federation has defined an IXP as;

A network facility that enables the interconnection of more than two independent Autonomous Systems, primarily for the purpose of facilitating the exchange of Internet traffic.

An IXP provides interconnection only for Autonomous Systems. An IXP does not require the Internet traffic passing between any pair of participating Autonomous Systems to pass through any third Autonomous System, nor does it alter or otherwise

IXP Database

Organization Profile

Internet Neutral Exchange Association

General

[Introduction](#)

[Contacts](#)

[IXPs](#)

[Users](#)



Location: Ireland

Established: 1996-09-01

Affiliation: Member

Board Contact:

Email: barry.rhodes@inex.ie

Website: <https://www.inex.ie/>

[Edit](#)

IXP Database

IXP Profile

Internet Neutral Exchange Association

[Profile](#)[Network](#)[Switches](#)[Services](#)[Pricing](#)[Tree](#)[ASNs](#)[Users](#)

Automations

Automation Link<https://www.inex.ie/noncms/php/euro-ix-members.php>

AS #	COMPANY	IPV6
34218	3 Ireland	N
29644	Airspeed Telecom	Y
42227	Airwire	Y
20940	Akamai Technologies	Y
16509	Amazon	Y
61194	Another 9	N
49567	Aptus Broadband	Y
5580	Atrato IP Networks	Y
47680	BBnet	N

ASN Link✓

Traffic Link⊗

Traffic

IXP Database

ASN Database

Stats

[Search](#)

[Recent](#)

[Common](#)

IXP PARTICIPANTS

IPV6

UNIQUE ASNS

EURO-IX

8644

5420

4457

APIX

1511

444

928

AF-IX

302

60

271

LAC-IX

1703

1092

1243

NORTH AMERICA

2192

524

1081

GLOBAL

14352

7540

7564

IXP Database

ASN Database

[Stats](#) [Search](#) [Recent](#) [Common](#)

AS#	COMPANY	PRESENT AT	IPV6
6939	Hurricane Electric	80	Y
20940	Akamai International B.V.	78	
15169	Google Inc	69	
3856	PCH	62	
42	WoodyNet	56	
8075	Microsoft RUS LLC	52	
22822	Limelight	49	
10310	Yahoo Inc. (B)	35	
13335	CloudFlare Inc.	29	

IXPs

AMS-IX
AMS-IX Bay Area
AMS-IX Chicago
AMS-IX Hong Kong
AMS-IX New York
BBIX - Tokyo
BCIX
BIX.BG
BiX
Big APE
CATNIX
CoreSite - Any2 Denver / RMIX Denver
CoreSite - Any2 Los Angeles
DE-CIX Frankfurt

IXP Database

« Peering Matrix

[CSV Download](#)

	Total listed ASNs	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 IXPs	ALB-IX	AMS-IX	AMS-IX Caribbean	ARMIX	Angonix	BBIX - Hong Kong	BBIX - Tokyo	BCIX	BIX.BG	BNIX	BiX	CATNIX	CHN-IX	CIX	CIXP
AMS-IX	79.77	0		796	2	0	0	0	0	0	2	37	22	19	17	11	0	4	19	
AMS-IX Caribbean	30.77	0		2	13	0	0	0	0	0	1	1	1	0	0	1	0	1	0	
ARMIX	0.00	0		0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	
Angonix	50.00	0		0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	
BBIX - Tokyo	62.50	0		2	1	0	0	0	0	0	8	2	2	0	1	1	0	0	0	
BCIX	70.89	0		37	1	0	0	0	0	0	2	79	8	3	4	4	0	2	2	
BIX.BG	58.33	0		22	1	0	0	0	0	0	2	8	72	1	4	3	0	3	0	
BNIX	53.33	0		19	0	0	0	0	0	0	0	3	1	45	4	2	0	0	3	
BiX	42.86	0		17	0	0	0	0	0	0	1	4	4	4	49	2	0	1	1	
CATNIX	37.50	0		11	1	0	0	0	0	0	1	4	3	2	2	32	0	3	1	
CIX	37.50	0		4	1	0	0	0	0	0	0	2	3	0	1	3	0	32	0	
CIXP	75.00	0		19	0	0	0	0	0	0	0	2	0	3	1	1	0	0	36	
DE-CIX Frankfurt	72.48	0		385	1	0	1	0	0	0	2	46	26	17	17	8	0	5	15	
DIX - Lyngby	59.09	0		22	1	0	0	0	0	0	2	5	2	4	2	2	0	0	3	
ECIX Berlin	83.67	0		24	1	0	0	0	0	0	2	22	5	1	3	1	0	1	0	
Equinix Paris	83.38	0		131	1	0	0	0	0	0	2	19	10	8	5	6	0	2	7	
Equinix Zurich	98.95	0		69	1	0	0	0	0	0	2	10	7	4	2	3	0	1	2	
FICIX - Helsinki	56.67	0		9	0	0	0	0	0	0	0	2	1	2	2	1	0	1	1	
FVG-IX	75.00	0		3	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	
France-IX Paris	89.80	0		113	1	0	0	0	0	0	2	17	8	12	7	6	0	2	5	

IXP Database

[«](#) ASN Database

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Search

Advanced Filters

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IXP Database

« Switch Database

[Browse](#) [Recent](#) [For Sale](#) [My IXP Switches](#) [Add Switch](#)

NAME	VENDOR	MODEL	IXP	SOFTWARE VERSION	CREATED
Cremat	Arista	7280SE-72	CATNIX	4.15.3F	Sept. 28, 2016
Sucre	Arista	7280SE-72	CATNIX	4.15.3F	Sept. 28, 2016
CIX2	Force10	S4810	CIX	9.10(0.0)	Sept. 23, 2016
mlx-zh4	Brocade	MLXe-16	SwissIX	5.7.0dT163	Aug. 02, 2016
mlx-rue	Brocade	MLXe-16	SwissIX	5.7.0dT163	Aug. 02, 2016
NAME	VENDOR	MODEL	IXP	SOFTWARE VERSION	UPDATED
switch26	Extreme	X480-24x(10G4X)	LINX LON2	15.4.1.3	Oct. 23, 2016

➤ IXP Database – where are we?

- Database schema is in place for IXPs to record their information about themselves and the operators they serve
- IXP API is live - <https://db.ix-f.net/api/ixp>

➤ IXP Database – What's next?

- Extend and internationalise the admin interface for all IXPs (APIX, LAC-IX and AF-IX)
- Create bespoke maintained APIs
- Future revisions to the database schema to capture more data

➤ IXP Database – use case

Thanks to Andy Davidson for the example

“who am I not peering with at LONAP?”

- You have a script which load direct adjacencies into an array
- You need a complete and canonical list of peers to compare differences

➤ IXP Database – use case

Using the IXP API

<https://db.ix-f.net/api/ixp>

➤ IXP Database – use case

```
{
  "ixp_info": {
    "status": "active",
    "updated": "2014-02-17T10:07:51Z",
    "name": "London Network Access Point",
    "created": "2011-08-16T13:26:26Z",
    "shortname": "LONAP",
    "ixp_id": "IX-F#18"
  },
  "timestamp": "2015-09-16T08:17:31.116Z",
  "version": "2014110401",
  "member_list": [
    {
      "asnum": 20915,
      "name": "100 Percent"
    },
    {
      "url": "http://www.2connectbahrain.com/",
      "asnum": 51406,
      "name": "2Connect"
    },
    {
      "url": "http://www.34sp.com",
      "asnum": 41357,
      "name": "34SP.com Ltd"
    },
    {
      "url": "http://4d-dc.com/",
      "asnum": 31463,
      "name": "4D Data Centres"
    },
    {
      "url": "http://www.afilias.info",
      "asnum": 12041,
      "name": "Afilias"
    },
    {
      "url": "http://www.akamai.com",
      "asnum": 20940,
      "name": "Akamai Technologies"
    },
    {
      "url": "http://www.alentus.com",
      "asnum": 21321,
      "name": "Alentus UK Ltd"
    }
  ],
  ,
}
```

➤ IXP Database – use case

```
ewP Switc Ports ports impo ports admin Circu circuli VXCn instar db_sc apiwe switc test_c

import urllib, json

url = "http://db.ix-f.net/api/ixp/18/member-list"
response = urllib.urlopen(url)

ixpdata = json.loads(response.read())

my_peers = [8916, 20940, 20915, 51406, 41357, 31463, 12041, 21321, 12536, 16509, 20712, 33920, 4

for member in ixpdata["member_list"]:
    if member["asnum"] not in my_peers:
        print "Get some peering with " + str(member["asnum"]) + " (" + member["name"] + ")"
```


➤ IXP Database – use case

```
enigma:Desktop andy$  
enigma:Desktop andy$ python ixp.py  
Get some peering with 6871 (PlusNet)  
Get some peering with 8689 (PowerGroup (Power Internet Ltd))  
Get some peering with 8676 (PRT Systems)  
Get some peering with 28792 (Public Internet Limited)  
Get some peering with 31402 (Rank Interactive (Blue Square Limited))  
Get some peering with 35662 (Redstation)  
Get some peering with 5552 (Redstone Communications Ltd)  
Get some peering with 5503 (RM Education Plc)  
Get some peering with 51409 (Sectorsix)  
Get some peering with 50056 (Advantage Interactive Ltd)  
Get some peering with 29550 (Simply Transit Ltd.)  
Get some peering with 48961 (Warwicknet Ltd)  
Get some peering with 20738 (Webfusion)  
Get some peering with 44444 (Websense Hosted R&D Ltd. (UK))  
Get some peering with 49158 (Wifinity)  
Get some peering with 13037 (Zen Internet)  
enigma:Desktop andy$
```

➤ IXP Database – use case

Why not just use the IXPs own data?

- This gives you a single API for many IXPs
- Get the same format for all IXPs, its standard – wohoo!
- Data is fed from the IXP – IXPs have accurate data, they own it.
- Portable, supportable and scaleable!

➤ IXP Database – IXP JSON Schema

- Contains both IXP data & IXP participant data
 - ASN (member list), locations, switch, RS, etc etc
- Open, consistent & an atomic design
- Currently 24 IXP independent implementations
- Open source implementation in IXP Manager
- Source available on GitHub;

<https://github.com/euro-ix/json-schemas>

IXP Database

- Give network operators the choice of getting accurate information from either IXP Database or PeeringDB
- The data can be obtained using APIs
- Increase use of automation
 - Saves time, money & increases accuracy



Questions?



Thank You!

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