Euro-IX and IX-F Update

January 2015

bijal at euro-ix dot net
Twitter: @euroix
What do we do?

• 2 Forums per year
• Maintaining IXP Database and tools
• Newsletter – Subscribe here: 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
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](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

- Known aggregated traffic over public peering LAN
- From 14,326 Gbps to 20,861 Gbps
- Data from 134 to 165 IXPs
IXP Database
IXP Database Project

- There are many IXP Databases…
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
• All non-sensitive information will be publically available
• IXPAs (and others as appropriate) 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](https://github.com/Euro-IX)
Euro-IX Tools
Euro-IX Tools

- IXP Service Matrix - euro-ix.net/tools/ixp_matrix
- Peering Matrix - euro-ix.net/tools/peering_matrix
- ASN Search euro-ix.net/tools/asn_search
- ASN Filter - euro-ix.net/tools/asn_filter
- Newest ASN entries - euro-ix.net/tools/asn_newest
- Most common ASNs - euro-ix.net/tools/asn_common
Enter an ASN, IXP or organisation name:

<table>
<thead>
<tr>
<th>Region</th>
<th>IXP Participants</th>
<th>IPv6 active</th>
<th>Unique ASNs</th>
</tr>
</thead>
<tbody>
<tr>
<td>AF-IX</td>
<td>275</td>
<td>43</td>
<td>223</td>
</tr>
<tr>
<td>North America</td>
<td>2161</td>
<td>390</td>
<td>1005</td>
</tr>
<tr>
<td>LAC-IX</td>
<td>1105</td>
<td>490</td>
<td>763</td>
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<td>APIIX</td>
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<td>350</td>
<td>872</td>
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<tr>
<td>Global</td>
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<td>5455</td>
<td>7394</td>
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</table>

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.
## ASN Filter

**ASN Filters**

### ASN Information:
- NAP INCA (Peru)
- 6NGIX (Korea, Republic of)
- AAIX (Austria)
- ACT-IX – Canberra (Australia)
- ADN-IX (France)
- AIXP (Tanzania, United Republic of)
- ALB-IX (Albania)
- AlbertaIX (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 Options:
- List all
- Only
- And other IXPs
- And at
- But not at
- And other IXPs, but not at

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**Euro-IX**
# Peering Matrix

<table>
<thead>
<tr>
<th>IXP</th>
<th>Total listed ASNs at IXP</th>
<th>ASNs that don't peer at other IXP</th>
<th>% of ASNs that don't peer at other IXP</th>
<th>ASNs that peer at other IXP</th>
<th>% of ASNs that peer at other IXP</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMS-IX</td>
<td>679</td>
<td>114</td>
<td>17</td>
<td>565</td>
<td>83</td>
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<td>APMIX</td>
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<td>2</td>
<td>9</td>
<td>71</td>
<td>0</td>
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<td>1</td>
<td>13</td>
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<tr>
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<td>35</td>
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<td>54</td>
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<td>45</td>
<td>29</td>
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<td>CIIX</td>
<td>37</td>
<td>8</td>
<td>22</td>
<td>29</td>
<td>78</td>
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<td>40</td>
<td>86</td>
<td>60</td>
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<tr>
<td>DE-IX</td>
<td>586</td>
<td>111</td>
<td>19</td>
<td>474</td>
<td>81</td>
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<table>
<thead>
<tr>
<th>AMS-IX Asia</th>
<th>Total listed ASNs at IXP</th>
<th>ASNs that don't peer at other IXP</th>
<th>% of ASNs that don't peer at other IXP</th>
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<th>% of ASNs that peer at other IXP</th>
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<td>71</td>
<td>0</td>
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<tr>
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<td>1</td>
<td>13</td>
<td>87</td>
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<td>111</td>
<td>19</td>
<td>474</td>
<td>81</td>
</tr>
</tbody>
</table>

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**Note:** The table above represents the peering matrix for various IXPs, showing the number of ASNs listed, those not peering at other IXPs, and the percentage of ASNs peering at other IXPs. The data is organized by IXP, with columns for total list size, non-peering ASNs, and percentage of non-peering ASNs, followed by columns indicating specific peerings at other IXPs and their respective percentages.
# IXP Service Matrix

<table>
<thead>
<tr>
<th>IXP</th>
<th>Location</th>
<th>Asn</th>
<th>Rs Asn</th>
<th># Of Customers</th>
<th># 1 P2P Ready</th>
<th>% 1 P2P Ready</th>
<th># Of Sites</th>
<th>Last Month Traffic [Gbits]</th>
<th>Public Stats</th>
<th>Non Profit</th>
<th>Priv. Peering</th>
<th>IPv6 Lan Type</th>
<th>IPv6 Registry</th>
<th>Multicast</th>
<th>Vlan Services</th>
<th>Out Of Band Access</th>
<th>24x7 Service</th>
<th>24x7 Access</th>
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<tr>
<td>ADN-IX</td>
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<tr>
<td>ALB-IX</td>
<td>Tirana</td>
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<td>0</td>
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<tr>
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<td>6777</td>
<td>679</td>
<td>530</td>
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<td>Y</td>
<td>ISP Peering LAN</td>
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</tbody>
</table>
Euro-IX projects
Traffic during FIFA World Cup

- Collaboration with RIPE NCC

Traffic at PTT Sao Paulo (Brazil vs. Germany)

Traffic at LINX London - Juniper LAN (Brazil vs. Germany)
• IXP BCOPs updated - [https://www.euro-ix.net/euro-ix-bcp](https://www.euro-ix.net/euro-ix-bcp)

• IXP Bogon list Project with Team Cymru - [http://www.team-cymru.org/ixp](http://www.team-cymru.org/ixp)

• 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](https://www.euro-ix.net/euro-ix-bcp) IXP Member list JSON Scheme
Internet Revealed, a film about IXPs

https://www.youtube.com/channel/UCFyucVRAAMzxyJIsxnGwsjw
Available in French, German, Portuguese, Spanish, Romanian, Arabic, Russian, Czech and Italian!
Interested in translating the video in your Language? Contact us!
Thank you!

Bijal Sanghani
bijal at euro-ix dot net
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