Euro-IX Update

AfPIF 4 – Casablanca, September 2013
Euro-IX - Bijal Sanghani
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Euro-IX is an association of Internet Exchanges Points, promoting an open interchange of ideas and experiences, gained to mutual advantage of the membership, by offering fora, meetings, mailing lists and on-line resources. Euro-IX also gathers information on regulatory issues affecting member exchanges within the region and where appropriate from other jurisdictions that could potentially impact on the membership.
Euro-IX - An Association of Internet Exchanges

Why does Euro-IX do this?

For the good of the IXP community:

- 2 Forums a year
- Maintaining the Website, database and tools
- Mailing Lists
- Working Groups and Task Forces
- Close relationship with IEEE Ethernet Study Group
- Annual European IXP Report
- Twinning Program ***
- Other project, e.g., Euro 2012 CL with RIPE NCC
- Benchmarking
- Staff Exchange Programs
Euro-IX - An Association of Internet Exchanges

• **72 affiliated IXPs:**
  - 48 IXPs in Europe (30 Countries)
    Operating over 100 Internet exchanges
  - 24 IXPs from the rest of the world
  - Newest Members, KOSIX (Kosovo), TunIXP (Tunisia), KINIX (Congo), UAE-IX (United Arabic Emirates), ZIXP (Zambia), OttIX (Canada), JINX (South Africa), TorIX (Canada), WAIX (Australia) and NAP Africa (South Africa)

• **11 affiliated patrons:**
  - ADVA Optical Networking
  - Brocade
  - Cisco
  - Extreme Networks
  - Interxion
  - Juniper Networks
  - MRV
  - Telecity
  - Telehouse
  - Alcatel-Lucent
  - Huawei
Euro-IX - An Association of Internet Exchanges

- Euro-IX Twinning Program - Africa
  - TIX (Tanzania) – DE-CIX (Germany)
  - ZIXP (Zambia) – LINX (UK)
  - KIXP (Kenya) – Netnod (Sweden)
  - MOZ-IX (Mozambique) – Netnod (Sweden)
  - KINIX (Congo) – Netnod (Sweden)

- In progress
  - Gambia – INEX (Ireland)
  - Gabon - TBC
Euro-IX - An Association of Internet Exchanges

- Euro-IX Twinning Program can offer:
  - Remote Membership with Euro-IX
  - Information
  - Experience
  - Support
  - Training
  - Equipment
IXPs and the Peering Community

- African Peering and Interconnect Forum (AfPIF4) – September 2013, Casablanca
- European Peering Forum (EPF8) – September 2013, Reykevich
- Equinix Asia Peering Forum
- Asia Peering Forum (JPF5) – August 2013
- Hawaii Peering Forum – September 2013
- Global Peering Forum (GPF9) – April 2014
Growth of IXPs in the Euro-IX Region since 1993
Meet the other Internet Exchange Point Associations (IXPAs)

- Asia Pacific – APIX – www.apix.asia
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• MOU signed to form the Internet Exchange Point Federation (IX-F) in November 2012
• Idea to have a Global IXP DB
• Set standards
• Automate Data Collection from all IXPs
• Plans to collaborate with PeeringDB
IXPs in Af-IX Region - Africa

29 KNOWN IXPs IN THE AF-IX REGION
22 of 54 COUNTRIES (AU) have an IXP
26 CITIES in Africa have IXPs

Known Af-IX region Traffic Growth from a 12 period in Gbps (over public peering LAN)
79 KNOWN IXPs IN THE APIX REGION
20 of 48 COUNTRIES have IXP
46 CITIES in Asia have IXPs

Known APIX Region Traffic Growth from a 12 period in Gbps (over public peering LAN)
53 KNOWN IXPs IN THE LAC-IX REGION
14 of 20 COUNTRIES have IXPs
43 CITIES in Latin America have IXPs

Known LAC-IX Region Traffic Growth from a 12 period in Gbps (over public peering LAN)
161 KNOWN IXPs IN THE EURO-IX REGION
48 of 50 COUNTRIES have IXPs
123 CITIES in Europe have IXPs

Known Euro-IX Region Traffic Growth from a 12 period in Gbps (over public peering LAN)
IXPs in Euro-IX Region – Cont.
70 KNOWN IXPs IN NORTH AMERICA
2 of 2 COUNTRIES have IXPs
41 CITIES in North America have IXPs

Known IXP Traffic Growth in North America from a 12 period in Gbps (over public peering LAN)
Range of Euro-IX IXPs with a given range of ASNs connected

- 3-10 ASNs connected - KINIX (Congo), TunIXP (Tunisia)
- 11-20 ASNs connected - TREX (Finland), NPIX (Nepal), OTTIX (Canada), GNIX (Netherlands)
- 20-100 ASNs connected – NAMEX (Italy), INEX (Ireland), Netnod (Sweden), JPNAP (Japan), NIX.CZ (Czech Republic), LyonIX (France)
- 101-300 ASNs connected - UA-IX (Ukraine), SWISS-IX (Switzerland), VIX (Vienna), Terremark (USA)
- 300+ ASNs connected – AMS-IX (Netherlands), DE-CIX (Germany), LINX (UK), MSK-IX (Moscow) & PTT.br (Brazil)
### Market share of vendors among EU IXPs within the Euro-IX Membership (%)

- **Alcatel-Lucent** – DE-CIX
- **Brocade** – AMS-IX, VIX, JPIX
- **CISCO** – LONAP, NIX.CZ, MSK-IX
- **Extreme** – PLIX, MSK-IX, LINX
- **DELL (Force10)** – BCIX
- **Juniper** – LINX, VSIX

The pie chart shows the market share distribution among the vendors:

- **Brocade**: 34%
- **Cisco**: 23%
- **Extreme**: 17%
- **Glimmerglass**: 9%
- **Force10/Dell**: 8%
- **Juniper**: 6%
- **Alcatel-Lucent**: 3%
Route server daemons in use within the Euro-IX Membership (%)

- BIRD – LINX, France-IX, NIX.CZ, VIX (45%)
- CISCO - AMS-IX, MSK-IX, UA-IX (18%)
- OpenBGPD - BCIX, SWISS-IX, NL-ix (16%)
- Quagga – PTT.br, JPNAP, ECIX (22%)
Route server operating systems in use within the Euro-IX Membership (%)

- Debian/LINUX – AMS-IX, TelIX, DE-CIX
- CISCO IOS – BIX, UA-IX
- FreeBSD – NIZ.CZ, PLIX, LyonIX
- Ubuntu – PTT.br, ECIX
The Internet revealed a Film about IXPs

Now available in English, French, Turkish, Spanish, Romanian, Portuguese and German, check out the Euro-IX Youtube channel:

http://www.youtube.com/user/TheEuroIX

... and more languages to come!
Links and References

• https://www.euro-ix.net/news-and-events
• https://www.euro-ix.net/tools
• https://www.euro-ix.net/home
Conclusions

• Euro-IX and the other IXPAs are Associations for Internet Exchanges
• Knowledge Base, sharing ideas and experience via the website, mailing list and Euro-IX Forums
• IXP Database – to contain information about IXPs from around the world
• Helping new/existing IXPs via the Twinning and Staff Exchange Programs
• Attendance to the bi-annual forums
• IXP Trusted Community
Thank You!

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