



# A Look in to the World of IXPs

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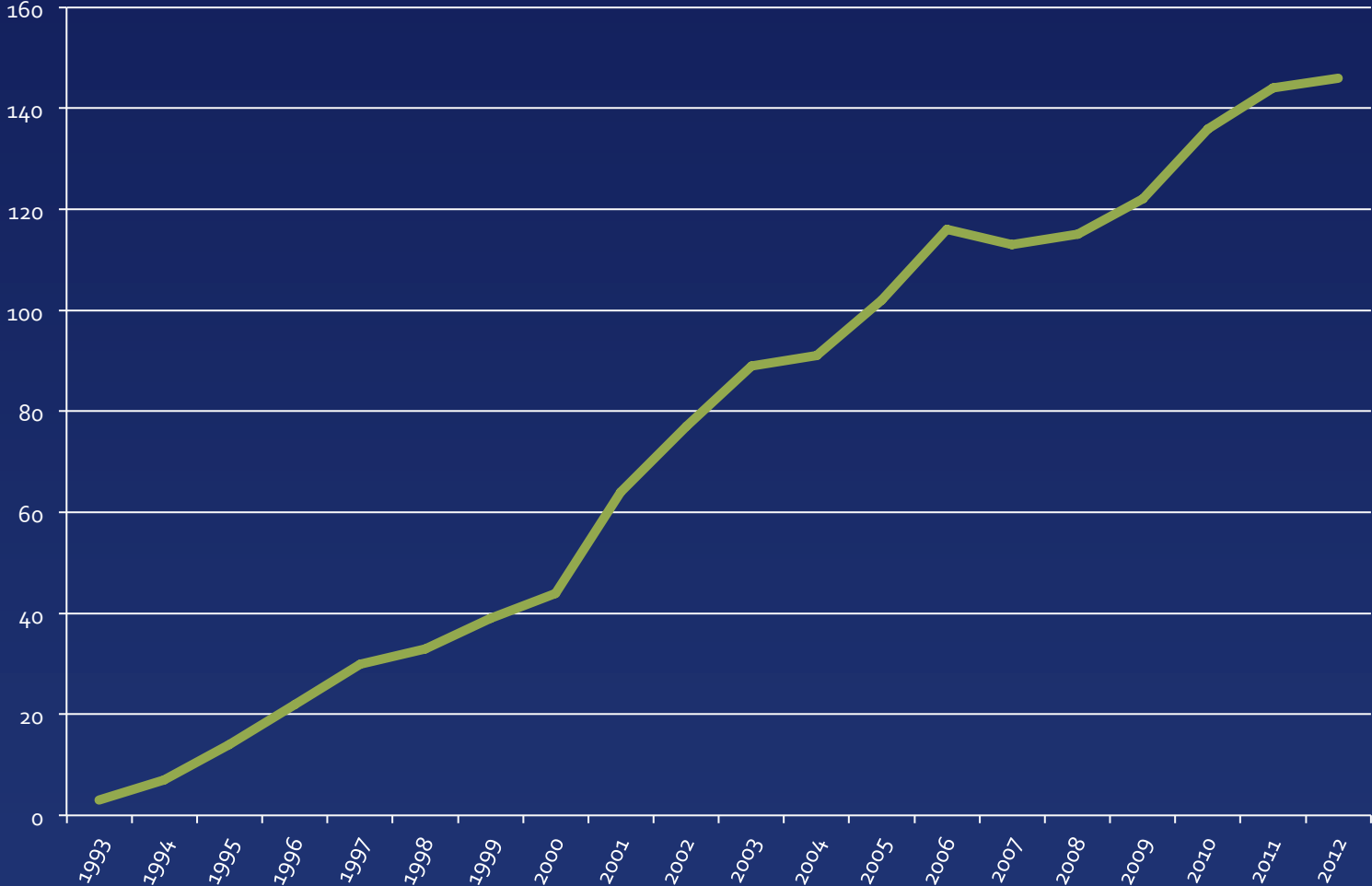
## An Association for Internet Exchanges

- 68 affiliated IXPs :
  - 52 IXPs in Europe (30 Countries)  
Operating over 70 Internet exchanges
  - 16 IXPs from the rest of the world
  - Newest Members, ALB-IX (Albania), TunIXP (Tunisia), KINIX (Congo), UAE-IX (United Arab Emirates)
- 9 affiliated patrons:
  - ADVA Optical Networking
  - Brocade
  - Cisco
  - Extreme Networks
  - Interxion
  - Juniper Networks
  - MRV
  - Telecity
  - Telehouse

# Euro-IX Region



# Growth of IXPs in the Euro-IX Region since 1993





# Why does Euro-IX do this?

For the good of the IXP community



- 2 Forums a year
- Maintains the Website, database and tools
- Mailing Lists
- Working Groups and Task Forces
- Euro-IX BMC - Benchmarking Club
- Annual European IXP Report
- Twinning Program
- Other project, e.g., Euro 2012 CL with RIPE NCC

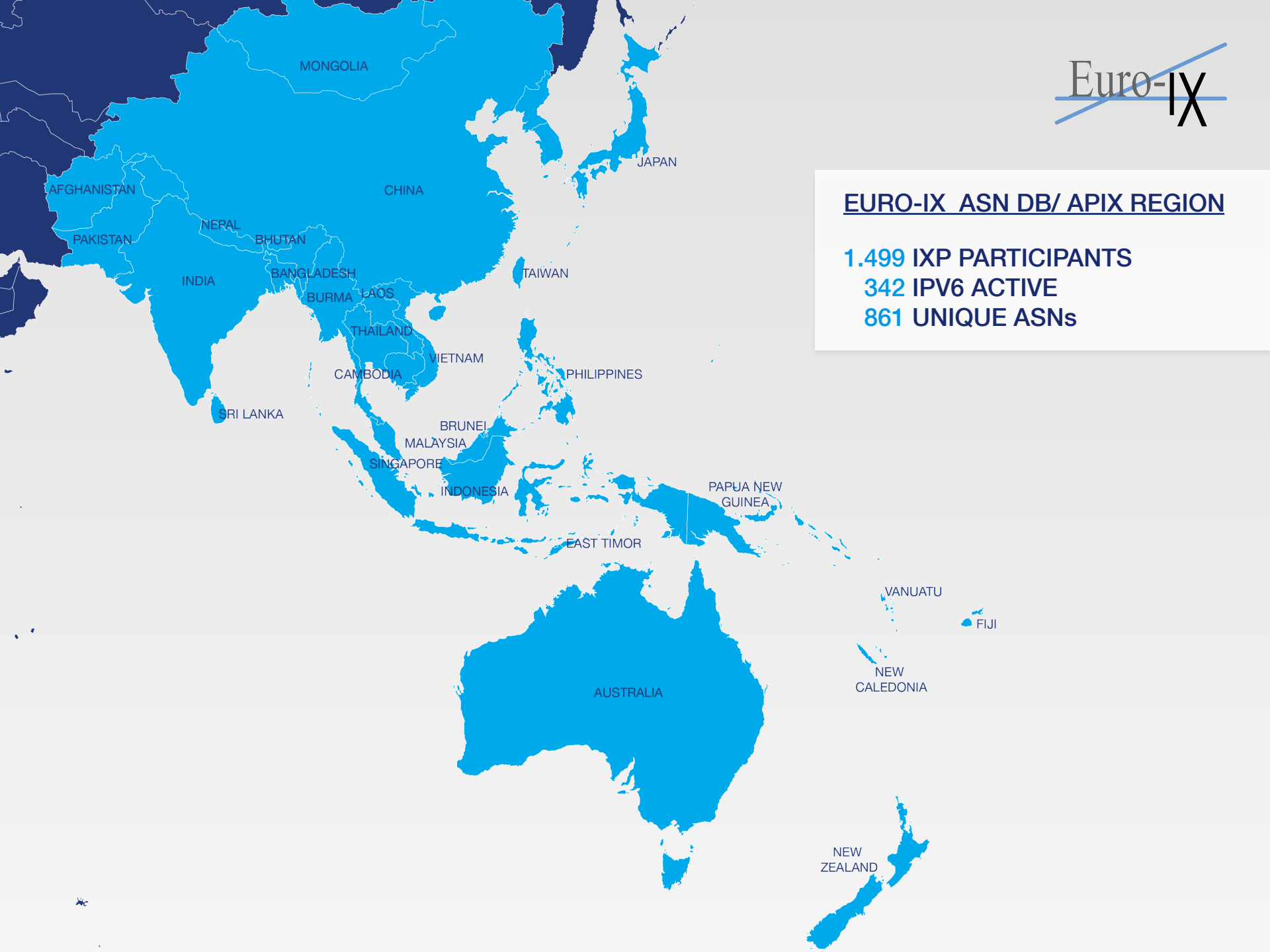
# Internet Exchange Federation

- Since 2005 non EU IXPs were invited to Euro-IX
- Formation APIX, LAC-IX and Af-IX (August 2012)
- MoU signed to form the IX-F in November 2012
- Idea to have a Global IXP DB
- Automate Data Collection from all IXPs
- Set standards



**75** KNOWN IXPs IN THE APiX REGION  
**20** COUNTRIES  
**45** CITIES

 EURO-IX MEMBERS  
 OTHER IXPs



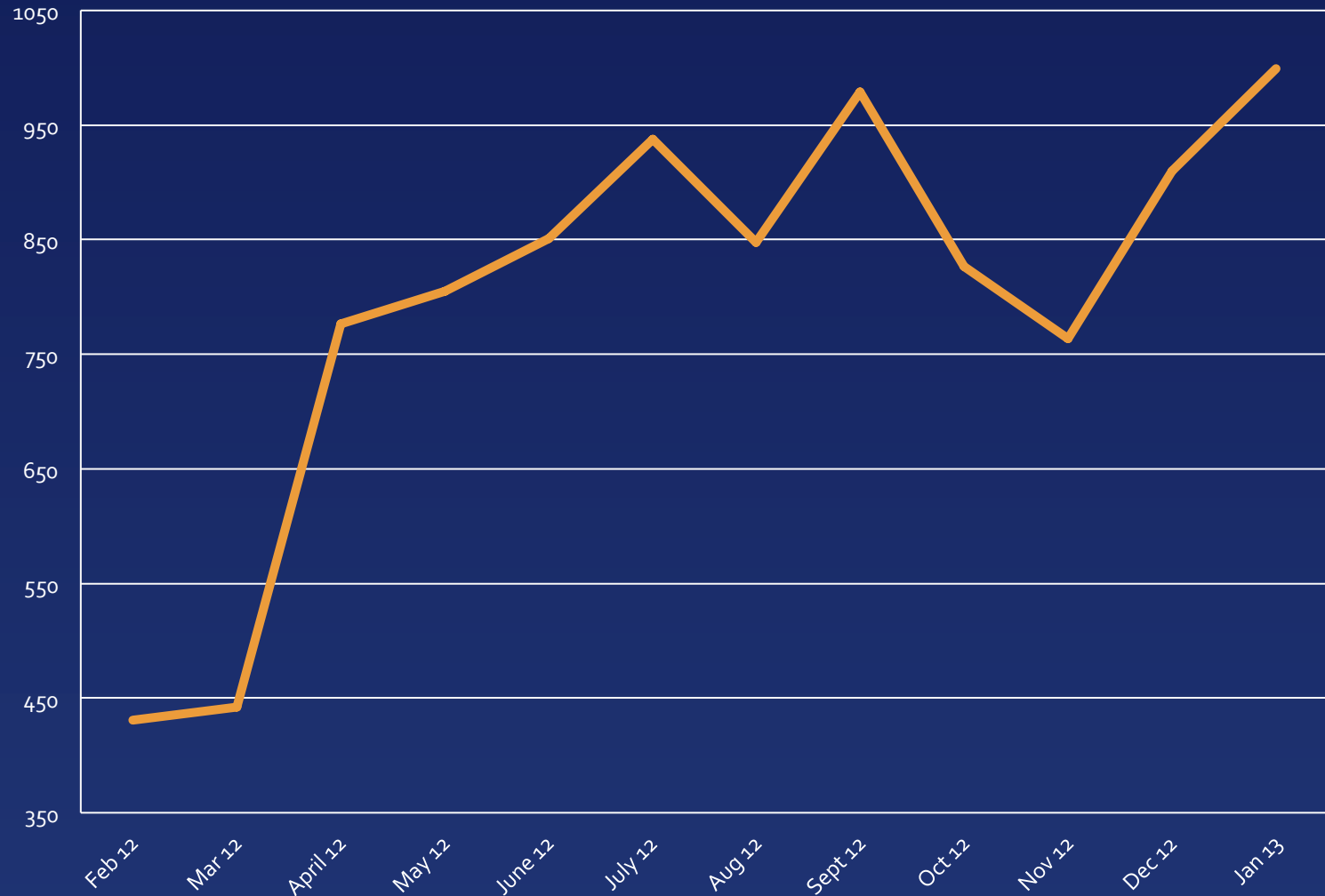
## EURO-IX ASN DB/ APiX REGION

**1.499 IXP PARTICIPANTS**

**342 IPV6 ACTIVE**

**861 UNIQUE ASNs**

# Known APIX region Traffic Growth 12 Months in Gbps (over public peering LAN)





**53** KNOWN IXPs IN THE LAC-IX REGION  
**14** COUNTRIES  
**43** CITIES

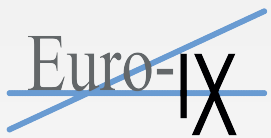
 EURO-IX MEMBERS  
 OTHER IXPs



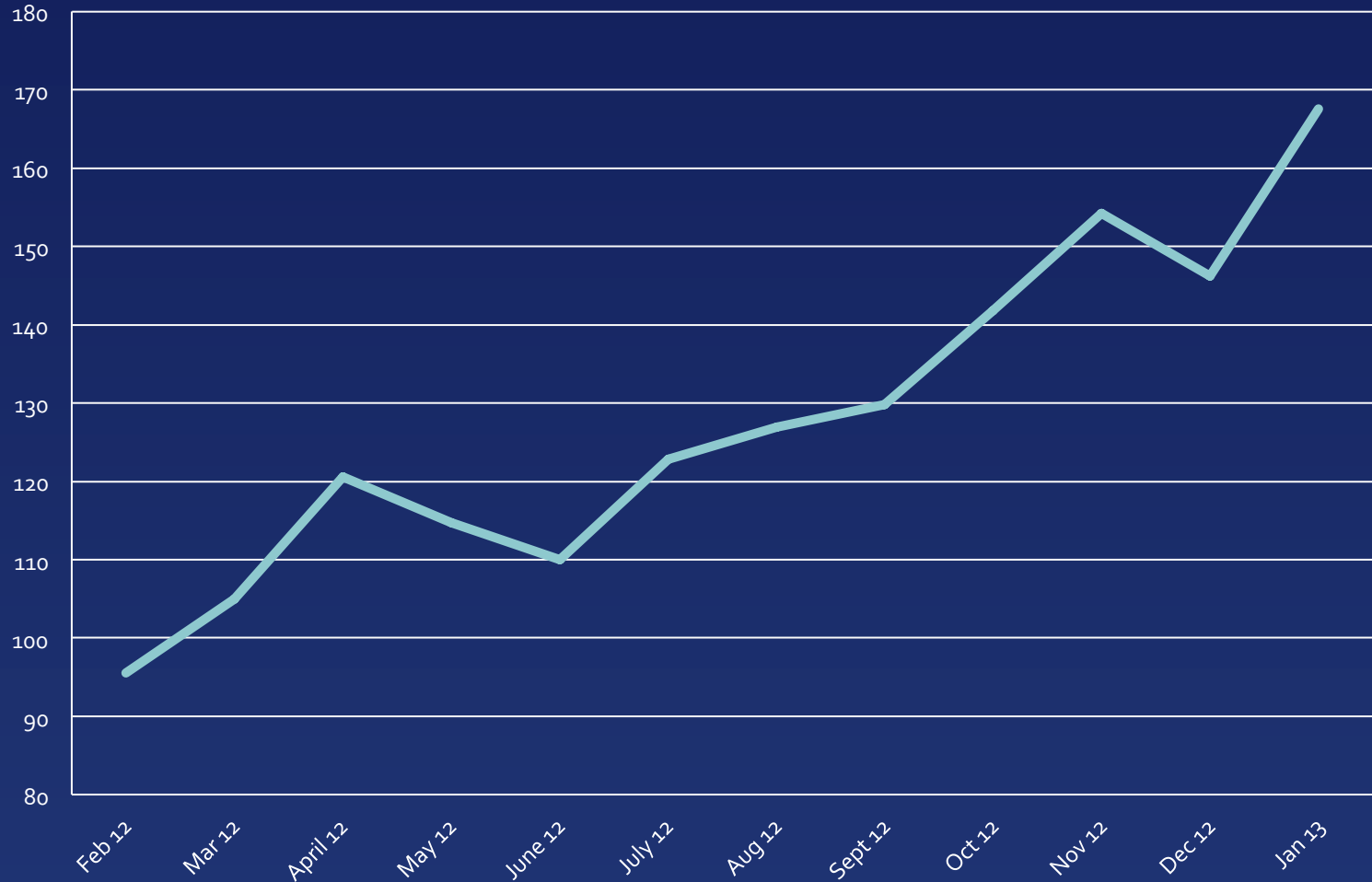


**EURO-IX ASN DB/ LAC-IX REGION**

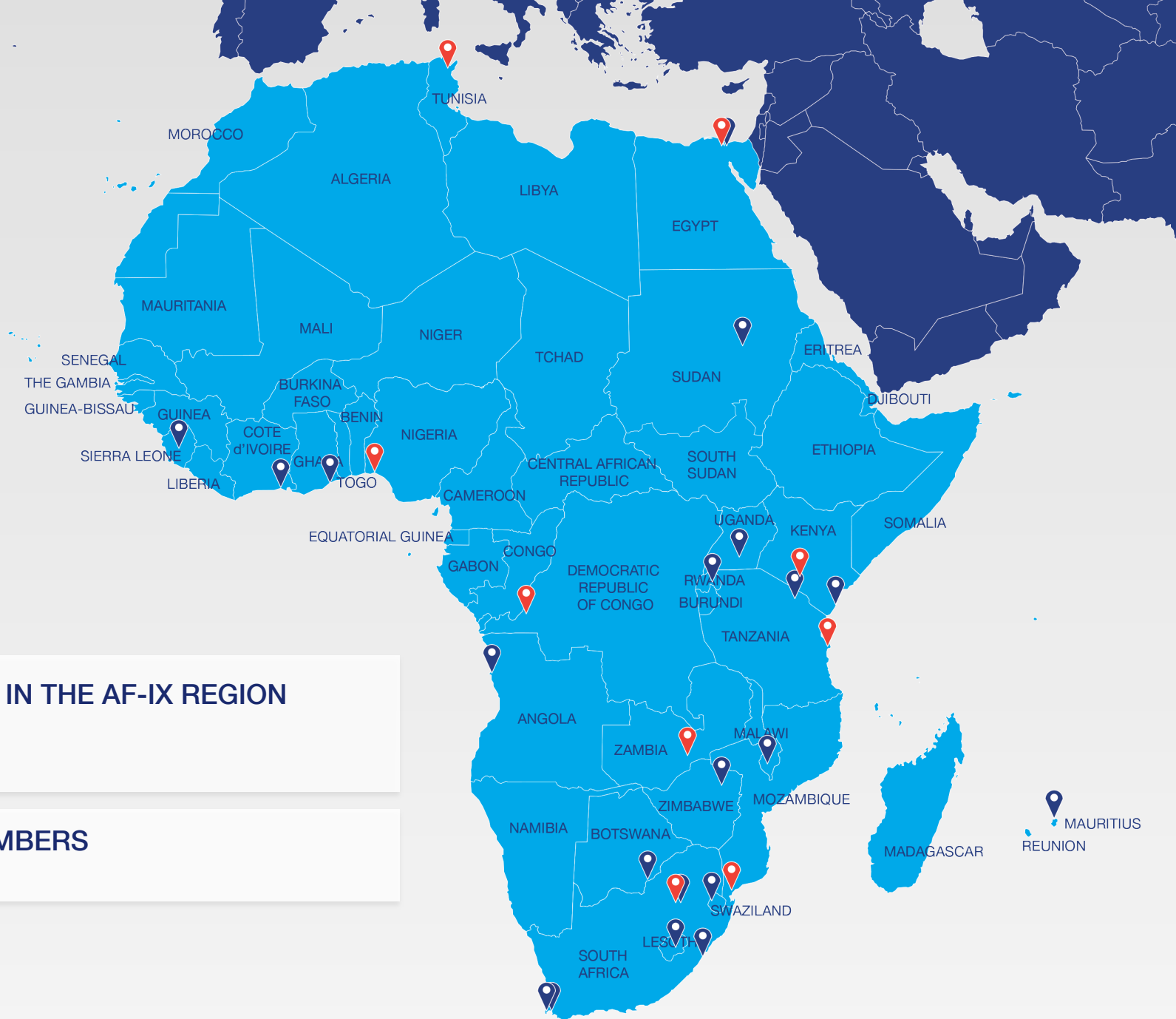
**772 IXP PARTICIPANTS**  
**269 IPV6 ACTIVE**  
**522 UNIQUE ASNs**



# Known LAC-IX region Traffic Growth 12 Months in Gbps (over public peering LAN)







**29** KNOWN IXPs IN THE AF-IX REGION  
**22** COUNTRIES  
**26** CITIES

 EURO-IX MEMBERS  
 OTHER IXPs



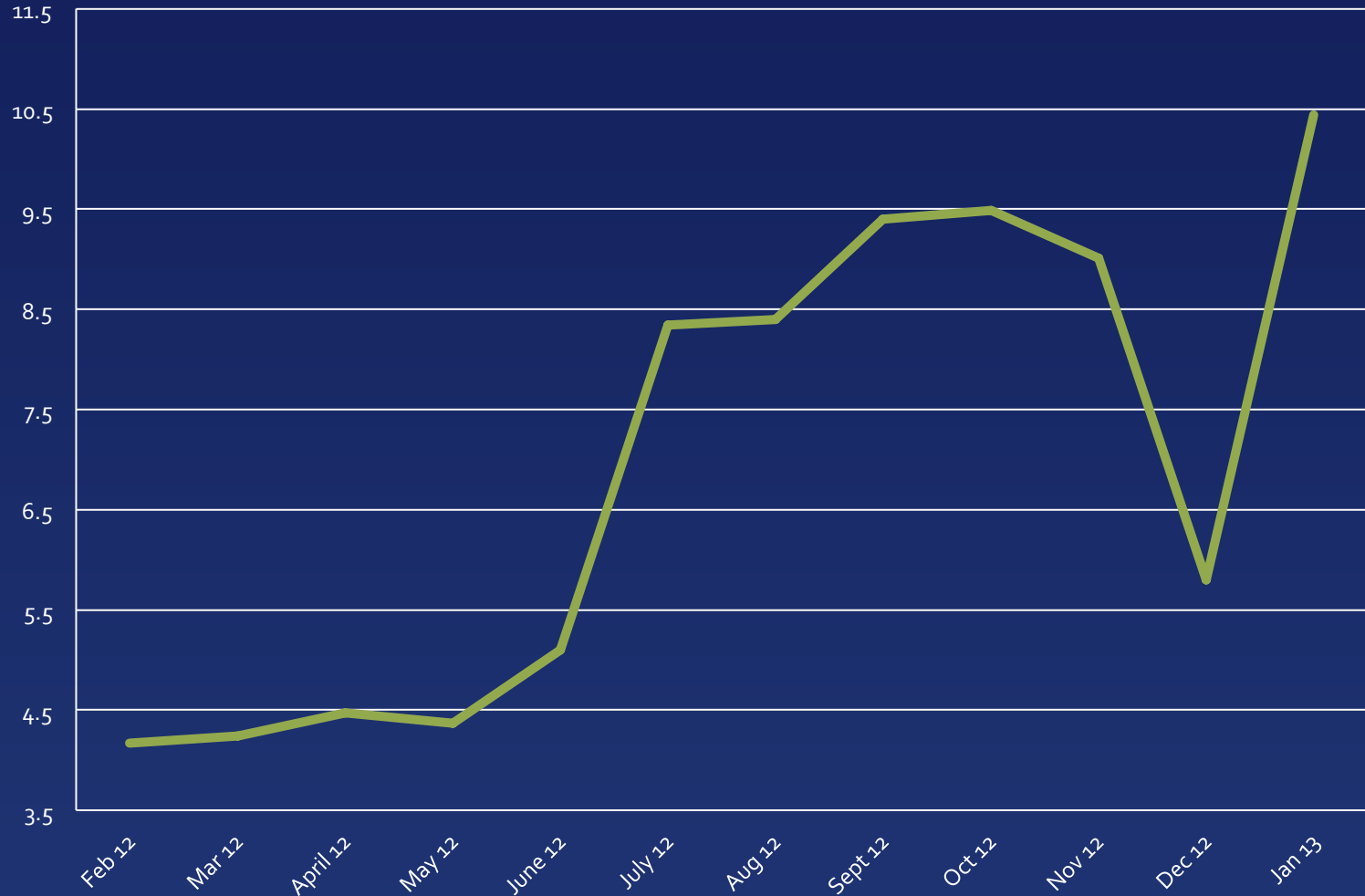


## EURO-IX ASN DB/ AF-IX REGION

**162 IXP PARTICIPANTS**  
**15 IPV6 ACTIVE**  
**131 UNIQUE ASNs**



# Known Af-IX region Traffic Growth 12 Months in Gbps (over public peering LAN)

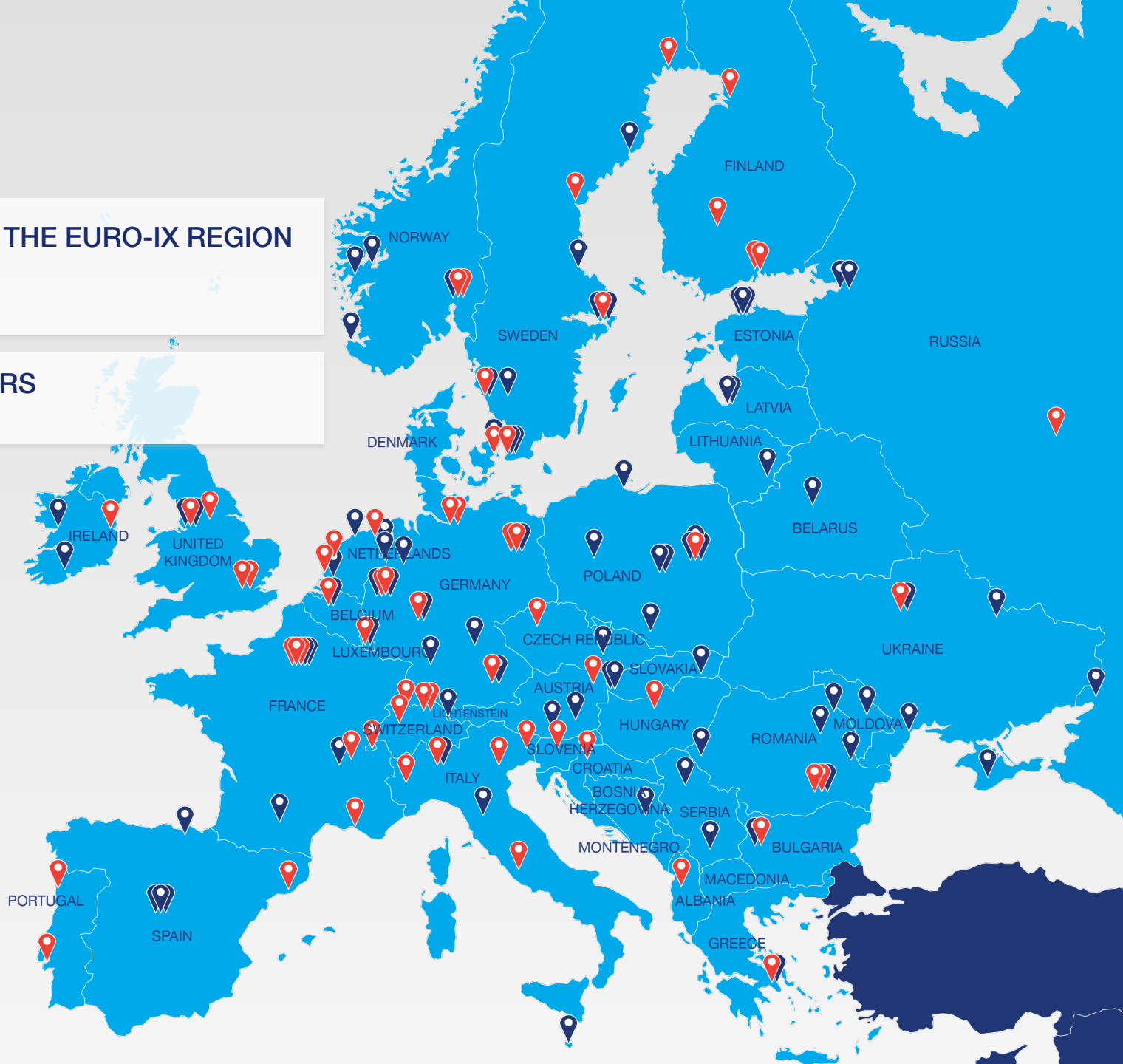


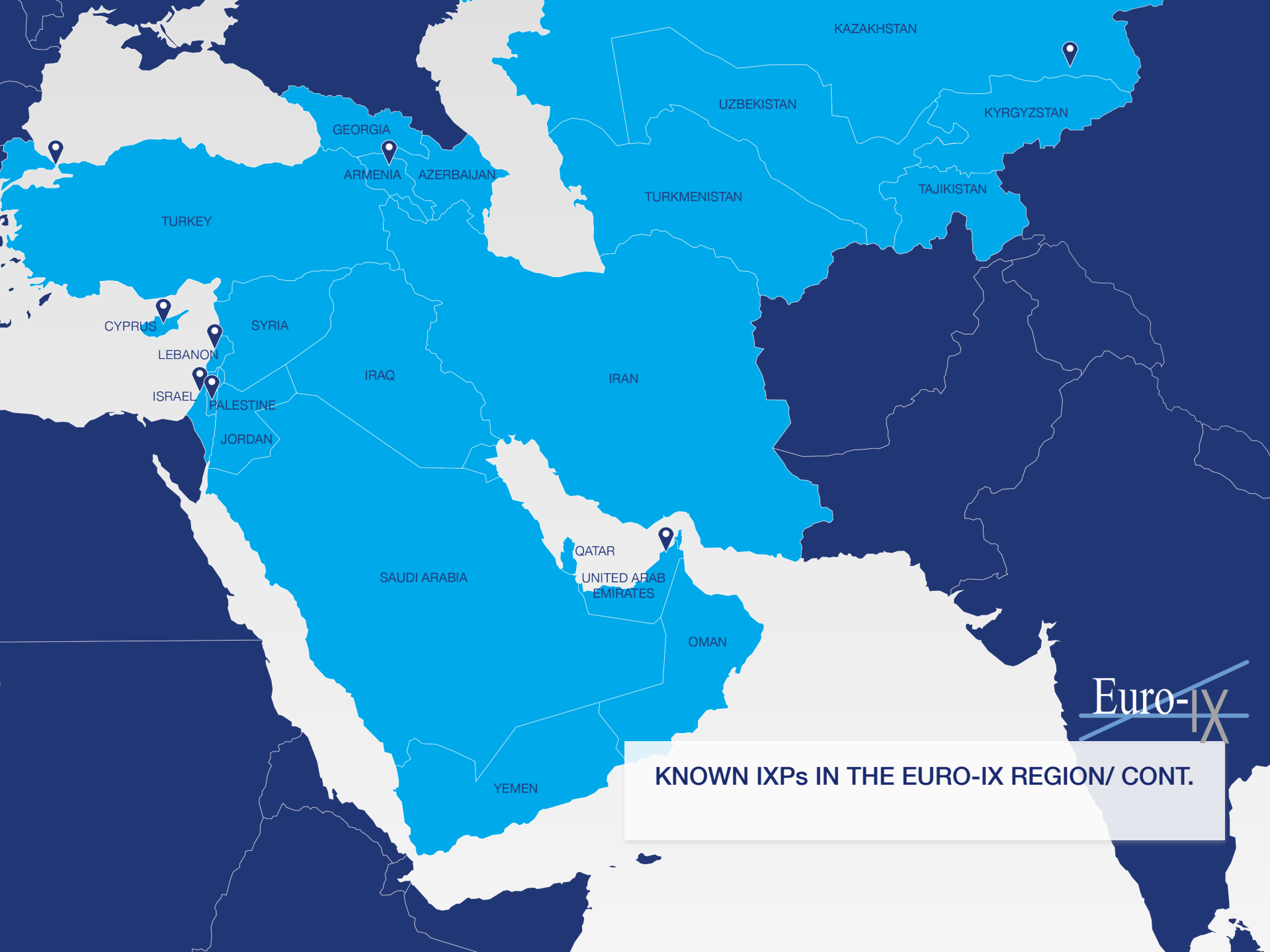


ICELAND

**161** KNOWN IXP<sup>s</sup> IN THE EURO-IX REGION  
**48** COUNTRIES  
**123** CITIES

 EURO-IX MEMBERS  
 OTHER IXP<sup>s</sup>





Euro-IX

KNOWN IXPs IN THE EURO-IX REGION/ CONT.



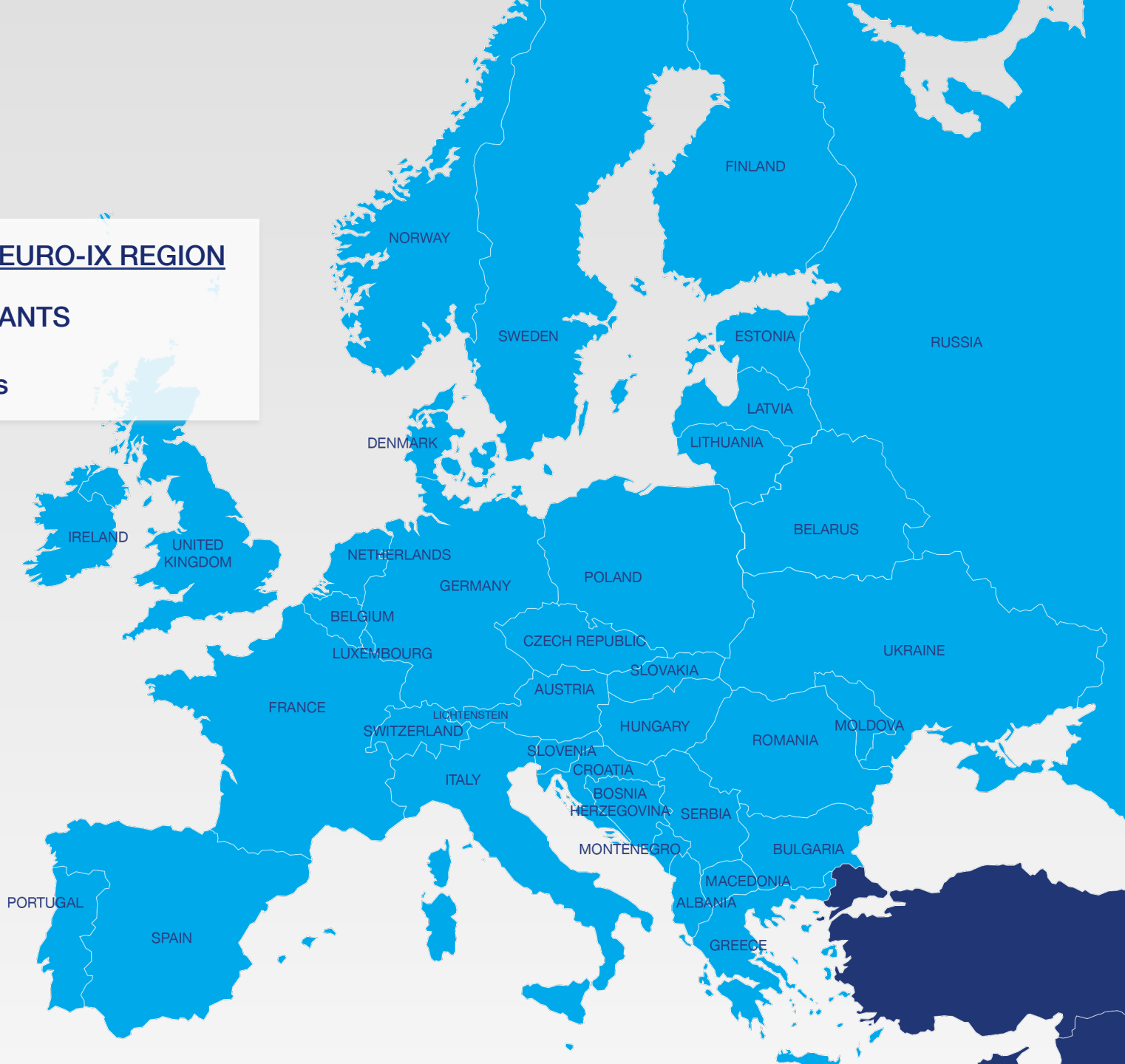
ICELAND

## EURO-IX ASN DB/ EURO-IX REGION

6.733 IXP PARTICIPANTS

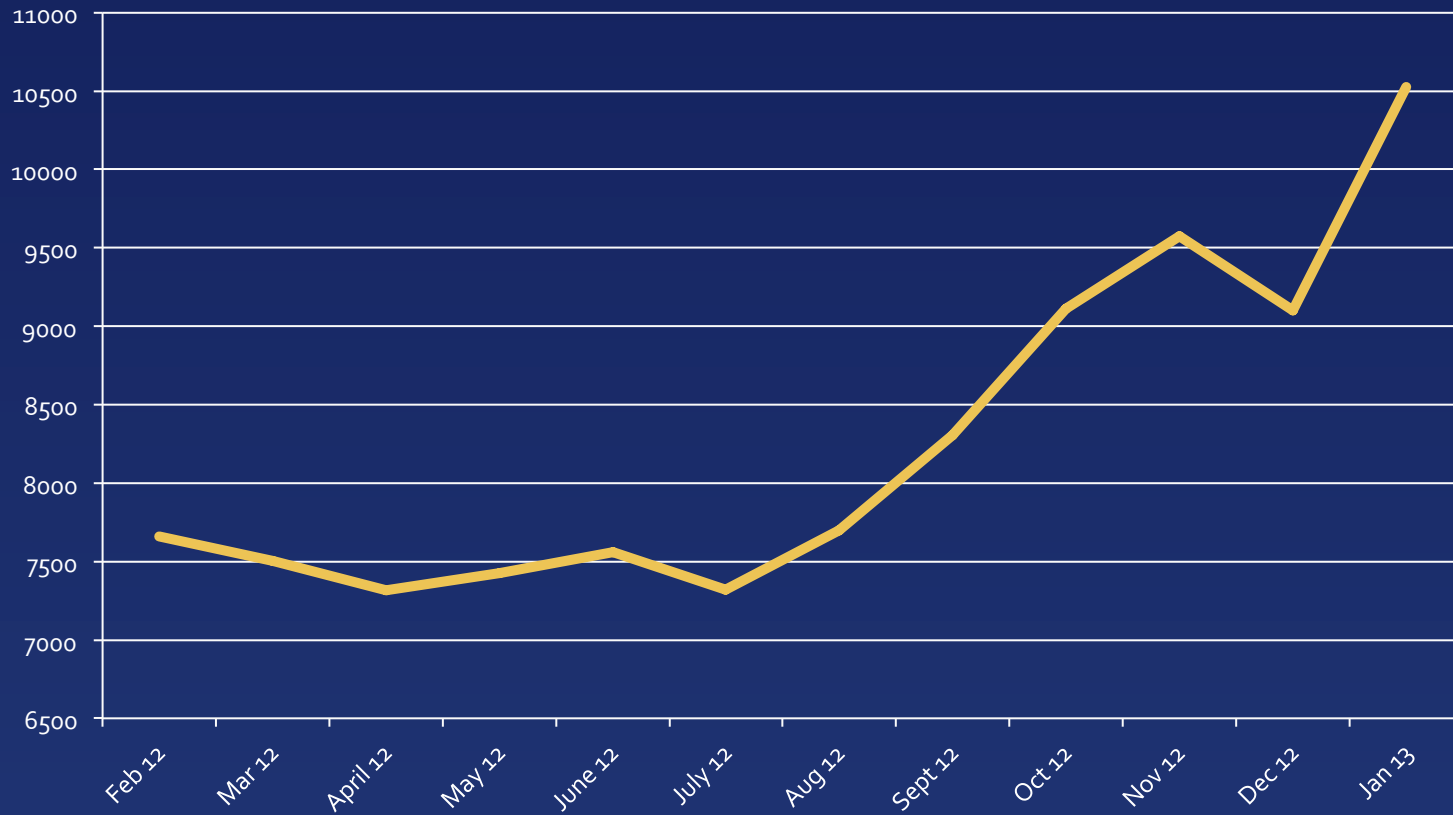
3.096 IPV6 ACTIVE

3.596 UNIQUE ASNs



# Euro-IX Region Traffic growth past 12 months in Gbps

(known IXPs in Europe, public peering LANs)





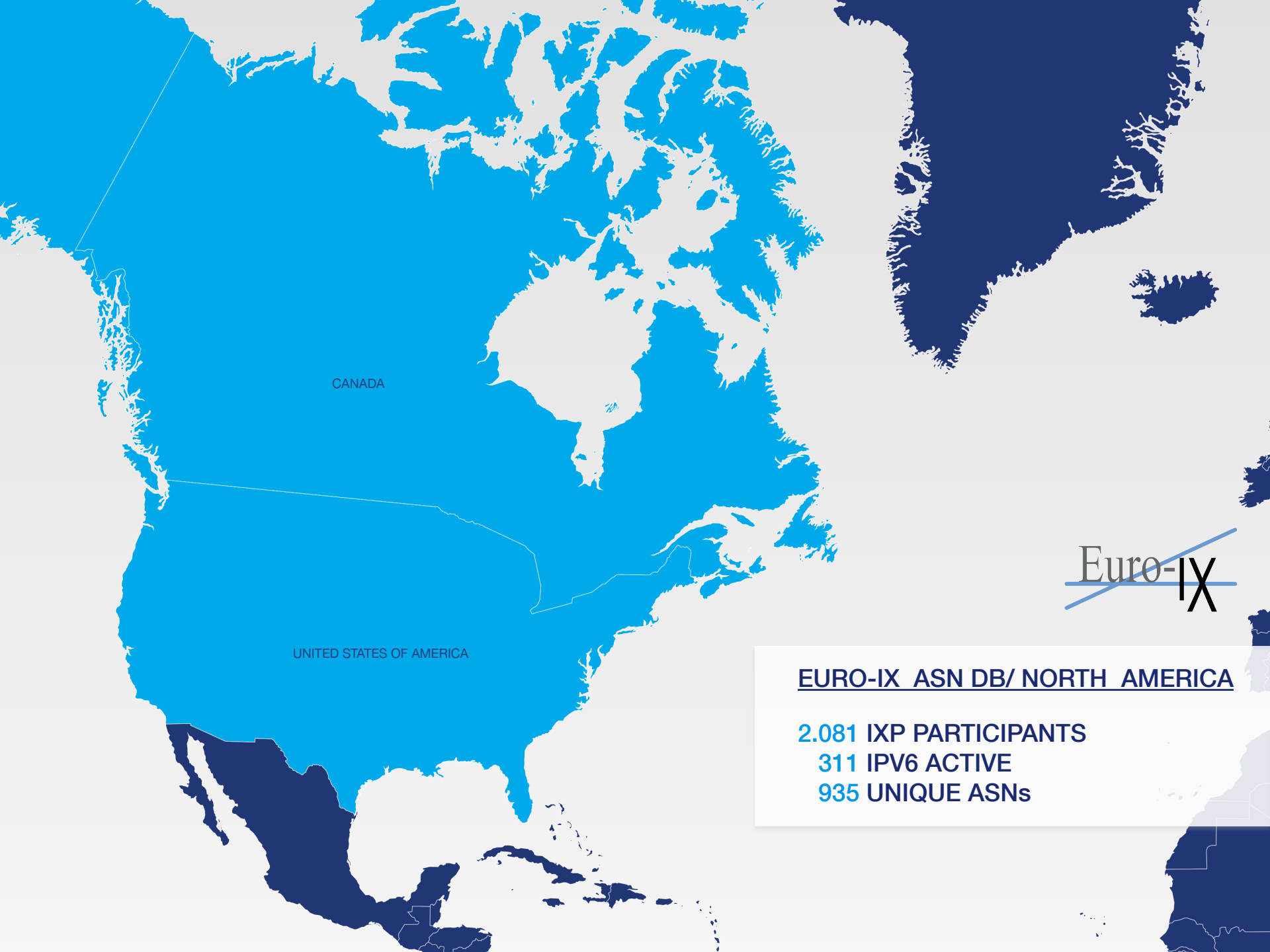
CANADA

UNITED STATES OF AMERICA

**68** KNOWN IXPS IN NORTH AMERICA  
**2** COUNTRIES  
**40** CITIES

 **EURO-IX MEMBERS**





CANADA

UNITED STATES OF AMERICA

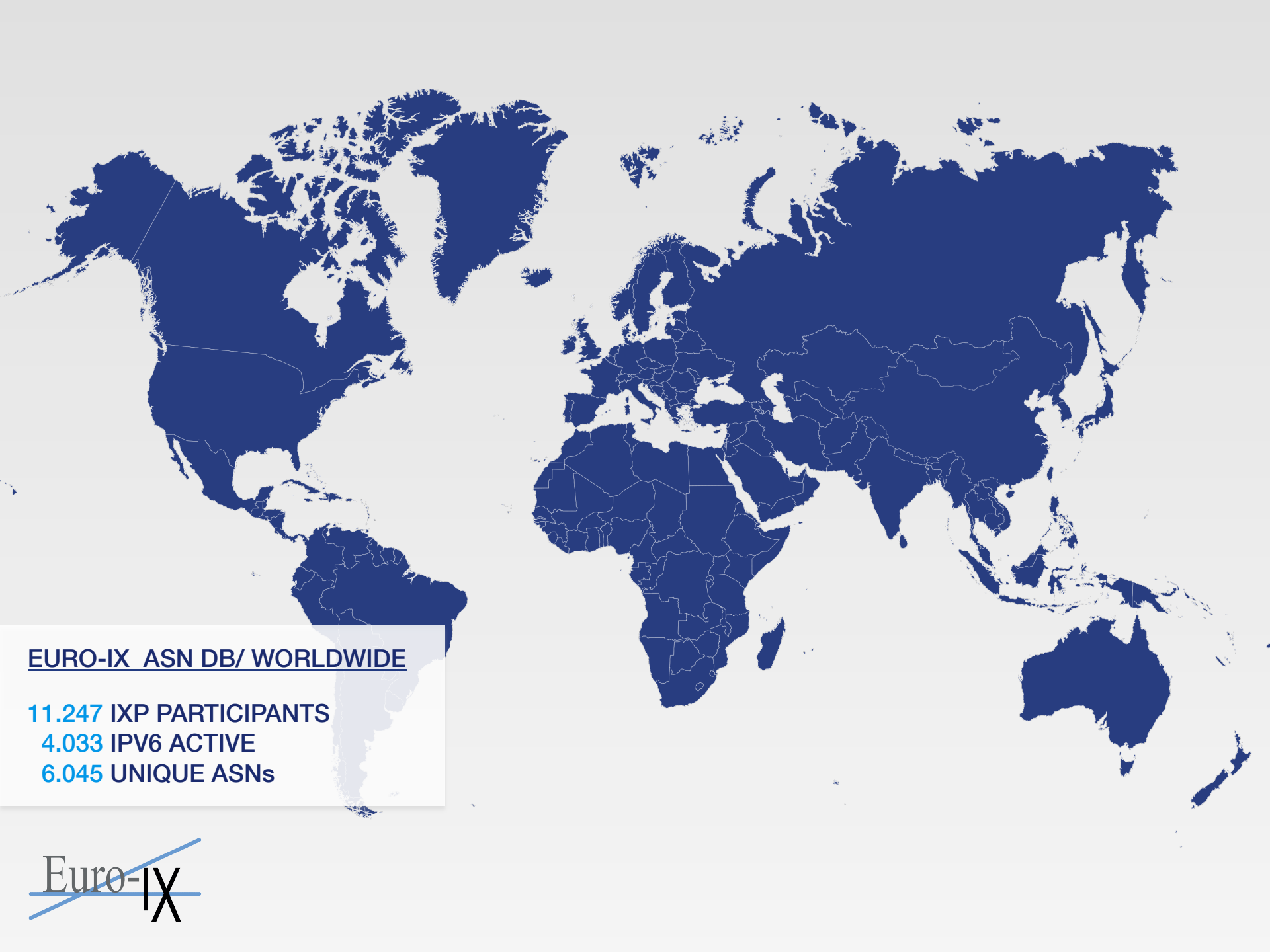


## EURO-IX ASN DB/ NORTH AMERICA

**2.081 IXP PARTICIPANTS**

**311 IPV6 ACTIVE**

**935 UNIQUE ASNs**

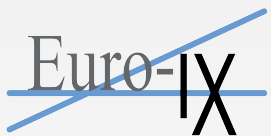


EURO-IX ASN DB/ WORLDWIDE

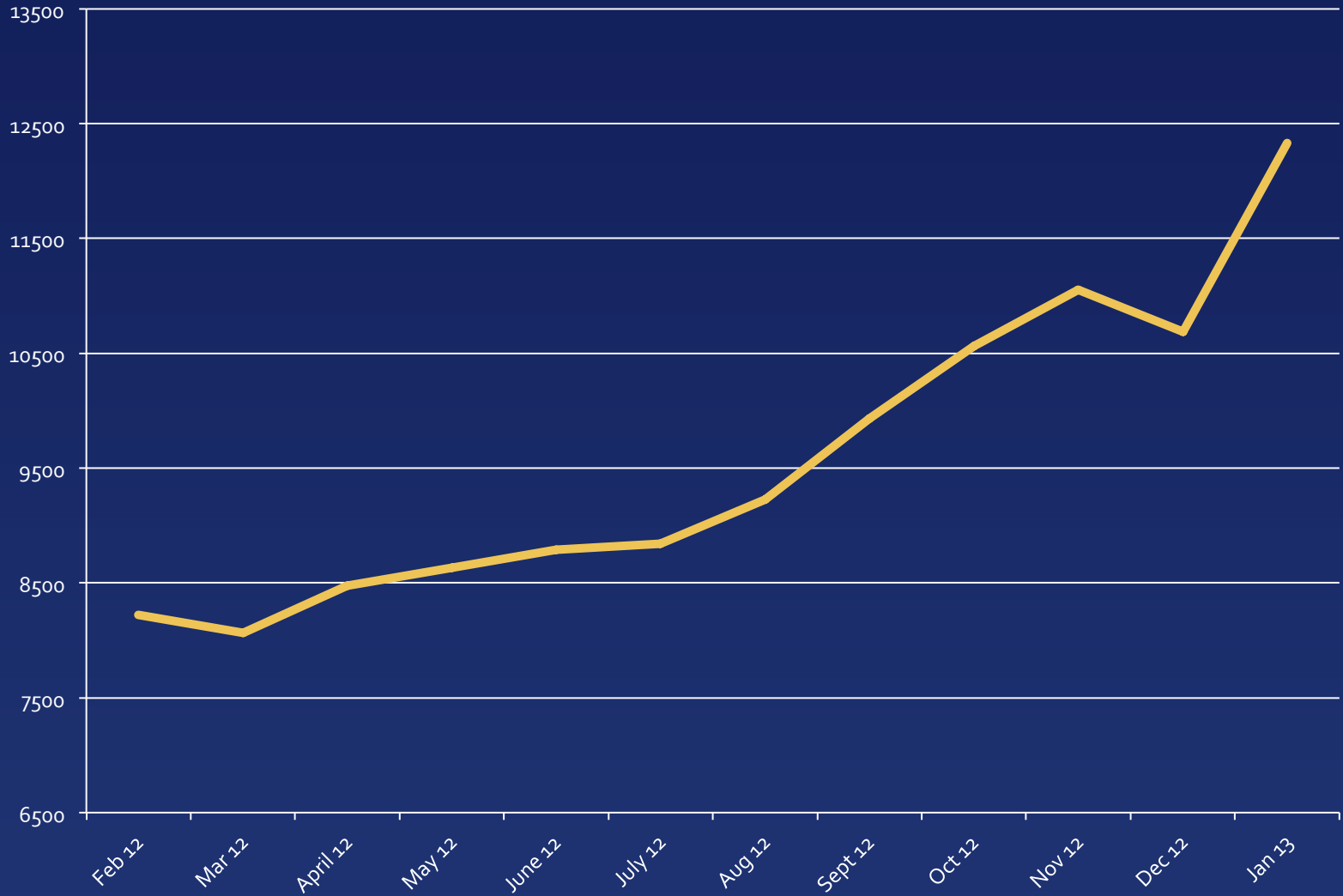
11.247 IXP PARTICIPANTS

4.033 IPV6 ACTIVE

6.045 UNIQUE ASNs

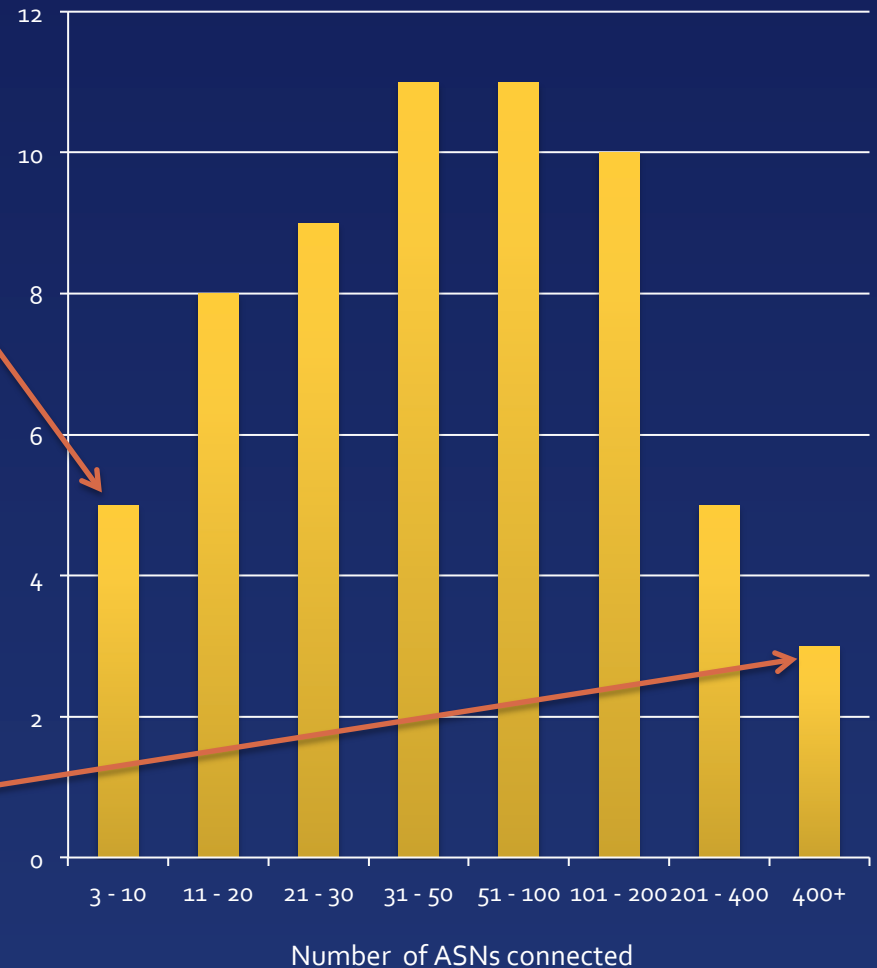


# Global Traffic growth past 12 months in Gbps (known IXPs, public peering LANs)



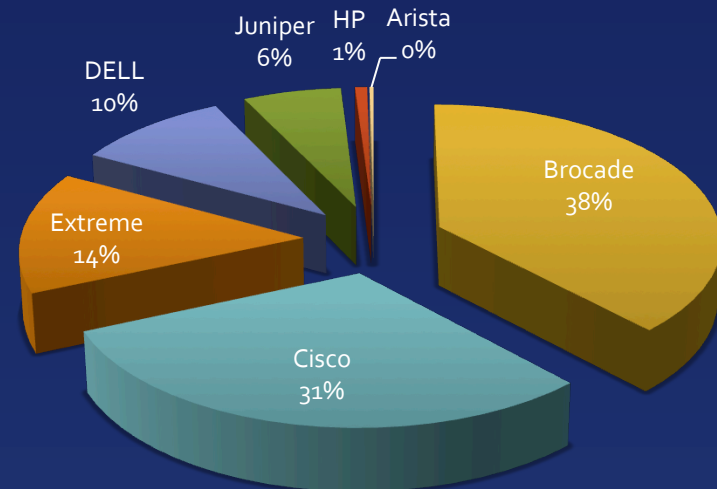
# Range of Euro-IX IXPps with a given range of ASNs connected

- 3-10 ASNs connected - KINIX (Congo), CAR-IX (Caribbean)
- 11-30 ASNs connected - TREX (Finland), NPIX (Nepal), Gigapix (Portugal), GNIX (Netherlands)
- 50-100 ASNs connected - NAMEX (Italy), INEX (Ireland), Netnod (Sweden), JPNAP (Japan)
- 100-300 ASNs connected - UA-IX (Ukraine), SWISS-IX (Switzerland), PLIX (Poland)
- 300+ ASNs connected - AMS-IX (Netherlands), DE-CIX (Germany), LINX (UK) & PTT.br (Brazil)



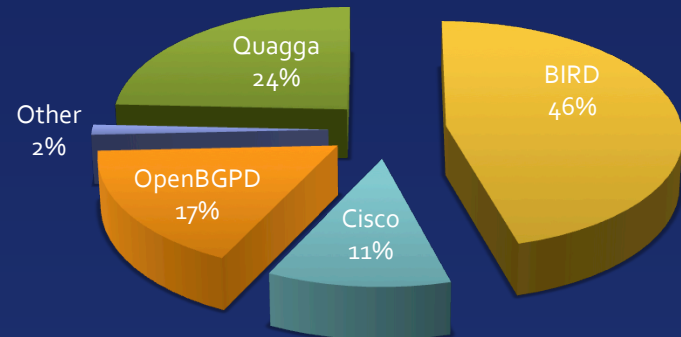
# Market share of vendors among EU IXPs within the Euro-IX Membership (%)

- Brocade – AMS-IX, MIX (IT), JPIX
- CISCO – LONAP, TOP-IX, MSK-IX
- Extreme – PLIX, MSK-IX, LINX
- DELL (Force10) – DE-CIX, BCIX
- Juniper – LINX, VSIX



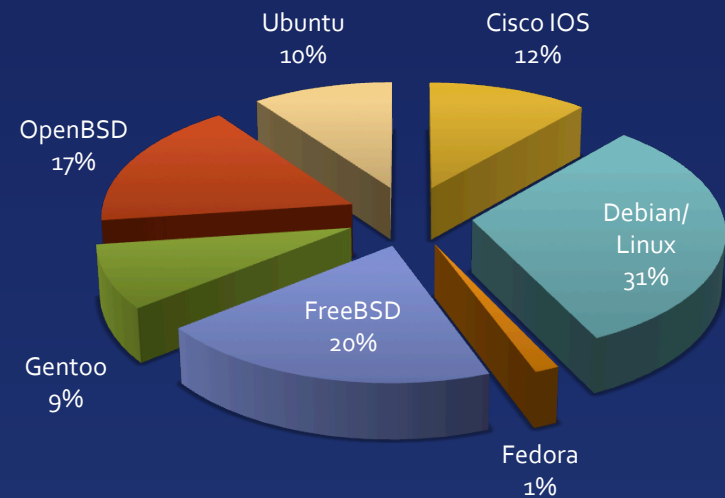
# Route server daemons in use within the Euro-IX Membership (%)

- BIRD – LINX, France-IX, CIXP
- CISCO - AMS-IX, MSK-IX, UA-IX
- OpenBGPD - BCIX, SWISS-IX, NL-ix
- Quagga – PTT.br, JPNAP, ECIX



# Route server operating systems in use within the Euro-IX Membership (%)

- Debian/LINUX – AMS-IX, TeIX, DE-CIX
- CISCO IOS – BIX, UA-IX
- FreeBSD – NIZ.CZ, PLIX, LyonIX
- Ubuntu – PTT.br, ECIX



# Summary

- Euro-IX is an Association for Internet Exchange Point
- Euro-IX Members are here to help, support, share experience and give advice.





# Thank You!

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